BY ORDER OF THE COMMANDER
AIR FORCE RESEARCH LABORATORY
(AFRL)

AIR FORCE RESEARCH LABORATORY
INSTRUCTION 61-101_ADDENDUM-C

1 NOVEMBER 2023
Incorporating Change 1, 16 JANUARY 2025

Scientific/Research and Development

LOGISTICS PROGRAMS IN SUPPORT OF TECHNOLOGY DEVELOPMENT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available at **www.e-Publishing.af.mil** for downloading or ordering

RELEASABILITY: There are no releasability restrictions on this publication

---

OPR: AFRL/DSO

Certified by: AFRL/DS
(Col Katherine Todorov)

Supersedes: AFRLI 61-101_ADDENDUM C, 1 August 2023

Pages: 76

This instruction is to be used in conjunction with DAFI 21-101, AFMC Supplement, Addendum-C, *Air Force Research Laboratory (AFRL) Logistics Maintenance Management and* applies to AFRL programs as defined in AFI 61-101, *Management of Science and Technology,* and AFRLI 61-108, *Management Control of Technology Development for AFRL.* This instruction applies across the entire Air Force Research Laboratory (AFRL) Research and Development (R&D) portfolio encompassing all programs in Basic Research, Applied Research, Advanced Technology Development, and Prototype and Experimentation. All existing references to Department of the Air Force (DAF) publications and forms are applicable to all DAF entities including the DAF and the United States Space Force (USSF), unless specifically excluded. This publication remains applicable to AFRL organizations aligned under USSF. Ensure all records generated as a result of processes prescribed in this publication adhere to AFI 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) using the DAF Form 847, Recommendation for Change of Publication; route DAF Forms 847 from the field through the appropriate functional chain of command. This publication may be supplemented at any level, but all direct supplements must be routed to the Center APO (AFRL/DSO) for approval.

SUMMARY OF CHANGES

This document has been revised and needs to be completely reviewed. This interim change revises AFRLI 61-101 Addendum C with changes specific to AFRL/RI. A margin bar (|) indicates newly revised material.

1. Management Philosophy and Policies. This instruction prescribes the basic policy, procedures and responsibilities for logistics programs and functions required to support AFRL technology development activities.

2. Compliance Terminology. For the purposes of this instruction, the following definitions apply:

2.1. **Shall, Must, Will.** Indicate mandatory requirements ("will" is also used to express a declaration of purpose for a future event).

2.2. **Should.** Indicates a preferred method of accomplishment.

2.3. **May.** Indicates an acceptable or suggested means of accomplishment.

3. Waivers. Any waivers to this or higher headquarters' (HHQs) directives shall be processed IAW the specific policy directive. If no specific form or format is specified, submit waiver requests through the 711th Human Performance Wing Commander (711 HPW/CC) or Technology Director for staffing to the Quality Assurance (QA) Superintendent (SUPT) using the template in **Attachment 2**. The QA SUPT will submit the waiver request to AFRL Center Logistics Manager (CLM), AFRL Integration and Operations Division (AFRL/DSO) for staffing to the AFRL Director of Staff (AFRL/DS) and staffing to HHQs, as applicable.

4. Policy Development. This instruction defines AFRL maintenance requirements as defined by DAFI 21-101, AFMCSUP, Addendum C.

5. General Responsibilities for Logistics Programs and Processes. This chapter outlines responsibilities for key leaders and personnel involved in logistics activities supporting technology development.

5.1. **AFRL/DS.** The AFRL/DS is responsible to ensure policy and procedures are established for AFRL. The AFRL/DS will:

5.1.1. Approve the annual Logistics Standardization and Evaluation Program (LSEP).

5.1.2. **AFRL CLM (AFRL/DSO).** The AFRL CLM will:

5.1.2.1. Make recommendations to AFRL/DS to enhance the effectiveness of logistics operations (LOG OPS).

5.1.2.2. Update the LSEP as required in conjunction with the QA offices. Ensure the LSEP is posted in the AFRL Enterprise Business System (EBS).

5.1.2.3. Consolidate all inputs from the AFRL TD/711 HPW on any changes to Logistics function policy and send to AFRL/DS for adjudication.

5.1.2.4. Act as the Center FOD monitor. All TD/711 HPW reports will be coordinated through AFRL CLM.

5.2. **The 711HPW/CC/ Director/DET/CC.** The Wing/DET CCs and TD Directors are responsible to ensure policy and procedures in this instruction are established to support technology development for their programs. The Director/Det CC's or their deputy will appoint/hire the QA Superintendent/QA Chief/QA Inspector in writing; position descriptions qualify as "in writing". Due to the multi-TD (or Site) constructs at WPAFB and Kirtland, the RQW Division Chief and the RVO Division Chief may appoint the QA Supt, TD LOG MGR and FOD monitor. The 711 HPW/CC appoints their LOG MGR. The Wing/DET CCs and TD Directors may delegate responsibilities involving day-to-day functioning of work centers or laboratories to the Integration and Operations Chiefs (I&O Chiefs). When a Wing/DET CCs and TD Director is not located on site, these responsibilities may be delegated to the site leadership. The Wing/DET CCs and TD Directors will:

5.2.1. Provide the necessary resources to support the logistics programs within their TD/711 HPW.

5.2.2. Appoint a TD/711 HPW LOG MGR in writing (position descriptions qualify).

5.2.2.1. The LOG MGR will not also serve as a QA SUPT or QA Inspector when either function exist under technology division management. Therefore, a QA SUPT may also serve as a TD/711 HPW LOG MGR if they are assigned to a support division (i.e., I&O division). At Ft Sam and Maui, the Wing CC/DET CC or TD Director may appoint someone to perform the duties of QA SUPT and report their LSEP findings to the parent unit for inclusion in metrics. They will be appointed as required.

5.2.2.1.1. Directors/Det/CC will determine QA requirements at their Geographically Separated Unit (GSU) and use QA at their discretion. Standing down GSU QA will be coordinated with AFRL CLM who coordinates with AFRL/DS. A copy of approval will be kept by site LOG MGR.

5.2.3. Appoint a FOD monitor in writing, which should be the LOG MGR.

5.2.3.1. Request TD/711 HPW Branch Chief and/or System Safety Manager (SSM) and the FOD monitor assess all research laboratories to identify potential FOD critical areas. There are two categories of Foreign Object (FO) areas: critical and non-critical.

5.2.3.2. FO critical areas are areas where maintenance, testing, and operations are performed on flight vehicles or flight hardware (e.g., jet engine maintenance, fuel cell maintenance, major sub-assembly maintenance, and support equipment maintenance, unique lab equipment vulnerable to FOD).

5.2.3.3. Ensure Division Chiefs perform FO Risk Management (RM) assessments on any work center identified as a potential FOD critical area.

5.2.3.4. The Branch Chief and/or SSM will report to the FOD manager any changes in work areas requiring assessment of FOD mitigation requirements.

5.2.3.5. Ensure Test, Measurement and Diagnostic Equipment (TMDE) is maintained and managed IAW TO 00-20-14.

5.2.4. Ensure a tool control program is established IAW this instruction.

5.2.5. Ensure Composite Tool Kits (CTK) management processes are followed.

5.2.5.1. Determine the TD/711 HPW CTK open/close interval for non-FOD critical areas. If weekly is selected, each CTK will be signed open/closed on a weekly interval using AFMC Form 62, *CTK Inventory and Control Log*. Note: all in-use CTKs supporting FOD critical areas will be signed open and closed on a daily interval using AFMC Form 62 and two-person concept.

5.2.5.2. AFRL TDs are authorized annual open/close interval.

5.2.6. Ensure an ElectroStatic Discharge (ESD) program is established IAW TO 00-25-234 and this instruction.

5.2.6.1. Ensure ESD points of contact (POCs) are appointed in writing.

5.2.7. Ensure necessary technical data is available to TD/711 HPW personnel. See **Chapter 7**.

5.2.8. Ensure site QA Inspectors have as much unrestricted access as possible to all TD/711 HPW areas.

5.2.8.1. If an area is restricted, provide a justification memorandum and duration of the restriction.

5.2.9. Ensure Support Equipment (SE) is maintained and managed IAW TO 00-20-1 and TO 34-1-3.

5.2.10. Ensure the Sort, Straighten, Shine, Standardized, Sustain and Safety (6S) process is implemented within their TD/711 HPW; ensure personnel implement and support the 6S process (**Attachment 3**).

5.3. **TD/711 HPW LOG MGR.** The LOG MGR is the primary logistics advisor to the 711 HPW/CC/Director, Division Chiefs, Branch Chiefs and TD/711 HPW personnel. Due to this role in policy implementation, the LOG MGR will not serve as a QA SUPT or QA Inspector if they perform/sign-off maintenance actions, inspections, or inventories for tool/equipment. The LOG MGR will:

5.3.1. Be responsible for parent TD/711 HPW and GSU location logistics policy and procedures.

5.3.1.1. Coordinate TD/Wing operating/local instructions and forms with AFRL/DSO.

5.3.1.2. Work closely with the QA SUPT to develop site policies and identify issues to resolve.

5.3.1.3. Manage the TD/711 HPW logistics programs and make inputs concerning logistics policy.

5.3.2. Coordinate with the applicable Division Chiefs to ensure logistics processes and procedures are supportable within the TD/711 HPW.

5.3.3. Develop TD/711 HPW-specific policies and procedures to support AFRL/site policies, as needed.

5.3.4. Determine initial/recurring TD/711 HPW logistics training requirements.

5.3.5. Perform the following responsibilities at the TD/711 HPW level. These responsibilities may be delegated to the division-level Tool Control Manager (TCM), when assigned.

5.3.6. Oversee design of all CTKs.

5.3.6.1. Develop procedures to assign the complete equipment identification designator (EID) to the CTKs in the TD/711 HPW/Division (see **Attachment 11**).

5.3.6.1.1. Maintain copies of the following records (hard copy or electronic):

5.3.6.1.2. A current list of all CTK Custodians with appointment letters (see **Attachment 17**).

5.3.6.1.3. A current list of all TD/711 HPW/Division CTK numbers.

5.3.6.1.4. A documented branch process for control of individually issued tools (if applicable).

5.3.7. Ensure an effective technical data management process is established.

5.3.7.1. Assist users to determine if equipment items will require either TOs or commercial-off- the-shelf (COTS) manuals as tech data, or if locally developed procedures are necessary.

5.3.7.2. Develop specific procedures for personnel to notify the Technical Order Distribution Office (TODO) when new Research, Development, Test, and Evaluation (RDT&E)/support equipment is brought into the laboratory or research areas.

5.3.8. Work with ESD POCs to interpret ESD policies and procedures. The Air Force ESD Control Technology Center, Materials and Manufacturing Directorate, Materials Integrity Branch (AFRL/RXNS) will be the final arbiter on questions relating to interpreting TO 00-25-234.

5.3.9. Monitor and report status of logistics programs, as required.

5.3.10. Review QA and other management reports and assist TD/711 HPW leadership in determining the appropriate management actions to meet new workloads, target deficiencies and identify and correct root causes.

5.3.11. Provide logistics guidance and support to TD/711 HPW program managers (PM), project leads and contracting officers to improve logistics efficiencies for research activities. This includes day-to-day operations, contract development, and research project planning.

5.4. **Division Chief.** The Division Chief is responsible for the logistics programs within their division. Division Chiefs may delegate responsibilities involving equipment, safety, logistics, and day-to-day functioning of work centers or laboratories. The Division Chief will:

5.4.1. Appoint LOG OPS personnel, in writing, to implement logistics programs within their areas. A copy of this appointment letter will be forwarded to the TD/711 HPW LOG MGR (see **Attachment 17**).

5.4.2. Manage Special Certification Roster (SCR) as outlined in this instruction.

5.4.3. Ensure a documented initial FOD awareness training and responsibilities briefing is given to all assigned personnel that work in or regularly traverse work centers conducting research, test, development, integration, or manufacturing.

5.4.4. Perform an FO RM risk assessment in conjunction with the SSM, FOD Monitor and Branch Chief on any work center identified as a potential FOD critical area/process. The assessment will be written, with supporting rationale, and submitted to the 711 HPW/CC/ Director.

5.4.4.1. The risk assessment tools from safety and engineering instructions will be used for the FO RM assessment (See DAFPAM 90-803, *Risk Management (RM) Guidelines and Tools*).

5.4.4.2. Assess the FOD hazard probability category to the appropriate level.

5.4.4.3. A risk number of nine or lower requires the area/process to be classified as FOD critical and to implement FOD prevention controls.

5.4.4.4. The opinion of the TD/711 HPW Safety representative will be the deciding factor when the assessment team members are divided on the risk number.

5.4.4.5. Work with SSM to ensure all FOD critical areas are identified during the safety review process at the beginning of a new program, research, experiment, etc.

5.4.4.6. Ensure FOD critical areas are clearly marked with prominent signs.

5.4.4.7. Manage tool control program; ensure required CTKs, special tools and SE are available.

5.4.4.7.1. May appoint a division Tool Control Manager (TCM) in writing; forward a copy to the LOG MGR.

5.4.4.7.2. Appoint CTK Custodians in writing and forward a copy to the LOG MGR.

5.4.4.8. Implement the division’s ESD program IAW TO 00-25-234 and this instruction.

5.4.4.8.1. Appoint branch level ESD POCs in writing, where required, to effectively manage the ESD program and forward a copy to the LOG MGR.

5.4.4.9. Ensure personnel have access to the Technical Data System (TDS) and the Enhanced Technical Information Management System (ETIMS) as required. Enforce adherence to the use of current technical data and management procedures, including Standard Operating Procedures (SOPs) and Locally Developed Procedures (LDPs).

5.4.4.9.1. Designate in writing government supervisors/managers authorized to grant access to restricted-access technical documents in TDS/ETIMS. Forward a copy of the approval letter to the LOG MGR and TODO. To add or delete government supervisors/managers, a new letter will be published.

5.4.4.9.1.1. Designations will be updated anytime there is a change of personnel to ensure accuracy/currency of appointments.

5.4.4.9.1.2. Approve and sign the title page of locally developed procedures (LDPs) and calibration work instructions (CWIs). Prior to signing, ensure the LDP/CWI has been routed through any relevant offices for their coordination/approval: Safety, QA, Security, Scientific and Technical Information (STINFO), etc.

5.4.4.9.1.3. Establish procedures for notifying the TODO to change TDS permissions and ETIMS library access when personnel in process, out process or change positions within the organization. Ensure personnel implement and support the 6S Process as implemented within their division.

5.4.4.10. Ensure general housekeeping, safety, security equipment accountability, vehicle management, environmental control and DAFMAN 91-203, *Air Force Occupational Safety Fire and Health Standards,* , are followed.

5.4.4.11. For TD/711 HPW that possess Training Aid Aircraft (TAA), appoint a TAA Manager in writing.

5.5. **Branch/Section Chief.** The Branch Chief is responsible to the Division Chief for all logistics matters. Branch Chiefs may delegate responsibilities involving day-to-day functioning of work centers or laboratories to an appointed POC. The Branch Chief will:

5.5.1. Enforce adherence to using current technical data and management procedures.

5.5.2. Ensure SE is maintained/managed IAW TO 00-20-1 and TO 34-1-3.

5.5.3. Review QA and other management reports to determine appropriate management actions to meet new workloads, target deficiencies and identify and correct root causes.

5.5.3.1. QA findings will be briefed to the Branch Chief.

5.5.3.2. Review LSEP results and trends to target areas for improvement.

5.5.4. Establish and review requirements for vehicles and ensure regulatory compliance concerning vehicle operation, scheduled and/or user level maintenance and services, as applicable.

5.5.5. Oversee the branch’s responsibilities in the FOD Prevention Program.

5.5.5.1. Ensure FOD preventative measures are considered during the AFRL Safety Permit process.

5.5.5.2. Ensure SSM and FOD Monitor participation in FO RM assessments.

5.5.5.3. Ensure FOD prevention measures are implemented in all applicable branch work centers.

5.5.6. Ensure positive control and accountability is enforced for all assigned CTKs/tools.

5.5.6.1. Ensure personnel using CTKs receive initial tool control training. Verify that one-time training is documented.

5.5.6.2. Ensure CTKs are secured when not in use.

5.5.6.3. Ensure CTKs/equipment is stored in their assigned location.

5.5.6.4. Ensure a tool procurement process is established. Ensure personnel do not bring personal tools into FOD-critical areas.

5.5.6.5. Ensure appropriate personal protective equipment (PPE) is available and ready for use.

5.5.6.6. Approve all individually-issued tools within the branch. Coordinate with the TD/711 HPW LOG MGR and LOG OPS personnel to develop a process to number, approve, and control individually-issued tools.

5.5.6.7. Ensure tool rooms have process to allow access to only authorized personnel.

5.5.6.8. If applicable, ensure the branch's ESD program is implemented per TO 00-25-234.

5.5.6.8.1. Ensure any area used to work on electrostatic discharge sensitive (ESDS) electrical items receives an ESD control survey and appropriate ESD measures are implemented.

5.5.6.8.2. Provide team members to assist the ESD POC in conducting the ESD control survey as required.

5.5.6.8.3. Notify TD/711 HPW/Division/Branch ESD POC when additional work areas are required or changes are made to existing areas.

5.5.6.8.4. Ensure all personnel involved with handling, repair, or storage of ESDS items receive initial and annual ESD awareness training.

5.6. **Program Managers.** PMs are responsible to define Technical Performance Measures (TPMs) per AFRLI 61-108 and correlate the TPMs to instruments to meet DAF metrology requirements. The PM may delegate any of these stated functions, however ultimate responsibility for completions always rests with the PM.

5.6.1. Ensure contracts include applicable TPM requirements, a reference to TO 00-20-14 is included in the contract's Statement of Work, and for contractors to adhere to DAF metrology requirements.

5.6.2. Notify LOG OPS personnel (i.e., the TMDE Coordinator) of the TPM instrument(s) so calibration support can be effectively established and maintained throughout the program. Include a timeframe for making the measurement, where applicable, to minimize delays.

5.6.3. Notify LOG OPS personnel when TPM instrument requirements change or are no longer applicable.

5.6.4. Contracted Logistics Materiel Control Activity (LMCA) personnel will not be assigned to fulfill Log Personnel roles and responsibilities that are not part of the contract.

5.6.5. Ensure contracted staff designated to perform logistical task, roles and/or responsibilities (i.e., logistical operations person, CTK custodian, ESD point of contact (POC), TMDE Coordinator, etc.… are only designated to perform logistical task, roles and/or responsibilities described IAW the statement of work (SOW) in their contract.

5.7. **LOG OPS Personnel.** LOG OPS personnel are located throughout the TD/711 HPW at the discretion of the Division Chiefs and/or Branch Chiefs. LOG OPS personnel will:

5.7.1. Be assigned to implement one or more logistics programs.

5.7.2. Manage assigned programs as specified by policy/directives.

5.7.3. Function as the logistics focal point for their assigned area.

5.7.4. Assist PMs and lab personnel with logistics processes and procedures (e.g., obtain calibration support for TPM instruments and other assigned actions).

5.7.5. Work closely with the LOG MGR to ensure logistics requirements are met.

5.7.6. Assist TD/711 HPW leadership in implementing management actions to meet new workloads, target deficiencies and identify and correct root causes.

5.7.7. Work with operator/user when necessary to coordinate equipment purchases with the proper personnel (TMDE Coordinator, Alternate Equipment Custodian, LOG MGR, Safety, LMCA, etc.) prior to making any purchases.

5.8. **Operator or User.** An operator or user is anyone that uses RDT&E equipment and logistics processes. Operators or users will:

5.8.1. Work with LOG MGR/LOG OPS Personnel to identify logistics requirements for their work area/laboratory.

5.8.2. Coordinate equipment purchases with the proper personnel (TMDE Coordinator, Alternate Equipment Custodian, LOG MGR, Safety, LOG OPS, LMCA, etc.) prior to making any purchases.

5.8.3. Use only TMDE calibrated by Air Force Metrology and Calibration (AFMETCAL) or approved source to collect quantitative measurements.

5.8.4. Prior to use, ensure the status of the TMDE item is appropriate for the application.

5.8.5. Notify the TMDE coordinator if the TMDE item is overdue for calibration or is labeled No Periodic Calibration (NPC) and requires calibration.

5.8.6. Tool and Equipment User. The primary responsibility for tool control lies with the tool user. All personnel using tools and equipment share the responsibility to comply with all written directives, ensure all repairs, inspections, and documentation are completed in a safe, timely and effective manner.

5.8.7. Must notify Alternate Equipment Custodians of any location changes of accountable R14 equipment.

5.9. **TAA Manager.** The TAA manager will follow Ground Instructional Training Aircraft (GITA)/TAA guidance per DAFI 21-101, AFMC SUP, Addendum C.

5.10. **SCR Memorandum for Record (MFR).** Special certifications are used to identify personnel authorized to clear Red X conditions on SE in laboratory and industrial areas and to perform the additional activities in **Table 1**. Ensure individuals assigned to the SCR are trained on forms documentation at time of appointment (See **Attachment 17**).

5.10.1. The Division Chief will designate in writing, personnel to perform the special certification items in **Table 1** (May be delegated to Branch Chief).

5.10.1.1. For Red X certification, individuals shall be identified either by equipment type (i.e., compressors, generators), by facility location (e.g., Building 45) or by branch.

5.10.2. To add individuals to the SCR, a new letter will be published. Personnel being deleted can be a pen/ink removed until a new letter is published.

5.10.3. The Branch Chief will ensure a copy of all special certification designation letters are available in the applicable work area/laboratory areas.

5.10.3.1. These MFRs may be stored electronically as long as they are readily accessible in the work area/laboratory area.

Table 1. Mandatory Special Certification Requirements and Prerequisites.

Item	Mandatory Special Certification Title	Prerequisites
1.	"Red-X" by primary duties	Mil: SSgt or higher, minimum 7-skill level. Civ: DR-I, DO-I, DX-1, DU-1, GS-6, WS-3, WL-6, WG-10, or higher. Contr: The contractor will provide a list of contractors who will perform Special Certification duties, if those duties are required per their contract, to the Branch/Division chief.
2.	Calibration Limitation Approval (refer to TO 00-20-14)	Mil: SSgt or higher, minimum 7-skill level. Civ: DR-I, DO-I, DX-1, DU-1, GS-6, WS-3, WL-6, WG-10, or higher. Contr: The contractor will provide a list of contractors who will perform Special Certification duties, if those duties are required per their contract, to the Branch/Division chief.
3.	Lost tool not found in FOD critical area.	Minimum Division Chief level to approve release. The Division Chief is not required to be on the SCR/SC by virtue of their position as the SC approval authority. The Deputy Division Chief may approve the release of the equipment/system in the Division Chief's absence. See DAFI 21-101 AFMC Sup, Addendum C for more guidance on lost tools in FOD critical areas.

5.11. **Equipment Maintenance.** Maintenance and calibration of support equipment must meet the requirements of TO 00-20-1, AFI 21-113, Air Force Metrology and Calibration (AFMETCAL) Program; TO 00-20-14; TO 34-1-3; equipment specific TOs and owner's manuals; host unit instructions and local supplements.

5.12. **ESD Control Program.** The following paragraphs defines the ESD control program and processes applicable in all research and laboratory areas; to prevent damage to ESDS items, equipment, and operational assets. AFRL ESD programs will follow TO 00-25-234. The ESD POC will:

5.12.1. Serve as the focal point for all ESD issues.

5.12.2. Work with LOG MGR to interpret ESD policies and procedures.

5.12.3. Ensure an ESD control survey is conducted on all areas handling or storing ESDS discrete electronic parts, circuit boards, modules, or assemblies.

5.12.4. Ensure required ESD controls, procedures, and equipment are implemented.

5.12.4.1. Ensure only ESD products and test equipment listed in TO 00-25-234, Table 7.3 are used.

5.12.4.2. Use of a substitute item may only be authorized by the Air Force ESD Control Technology Center.

5.12.5. Create an ESD program file that contains:

5.12.5.1. A completed copy of AFRL Form 30, *ESD Control Survey/Certification* (**see Attachment 15**).

5.12.5.2. ESD initial and annual training documentation.

5.12.5.3. References to this publication and TO 00-25-234, Section 7.

5.12.5.4. A list of all ESD control work areas within the TD/711 HPW/Division and forward to the LOG MGR. Update the list when control work areas are newly established, relocated or dismantled.

5.12.5.5. Any other pertinent instruction such as a local Operating Instruction (OI).

5.12.6. **ESD User.** ESD users will follow all requirements defined in TO 00-25-234 and this instruction.

5.12.7. **ESD Training.** AFRL will request updated training and tests developed by AFRL/RXNS and the training will be posted prior to the start of each calendar year. This training is located at the following location: **https://livelink.ebs.afrl.af.mil/livelink/llisapi.dll/open/ESD_Training**

5.12.7.1. All personnel that handle, repair, or store ESDS items will receive initial training and annual awareness training.

5.12.7.2. Trainees shall be tested for comprehension and understanding of ESD causes and control procedures.

5.12.7.3. Training and test results (≥ 80% to pass) will be documented in the employee's training and personnel folder or electronic system by their supervisor.

5.12.8. **ESD Control Surveys.** Conduct an ESD control survey on any area that handles or stores discrete electronic parts, circuit boards, modules, or assemblies. The ESD POC will determine the need for surveys in new work areas or when changes are made to an existing area. ESD control surveys will meet all requirements in TO 00-25-234.

5.12.8.1. Be performed by the ESD POC and the work center lead as a minimum.

5.12.8.2. Identify and define ESD control work areas.

5.12.8.3. Treat all electronic components, integrated circuits, and discrete parts as ESDS unless verified as non-sensitive.

5.12.8.4. List control measures and minimum equipment requirements with quantities if available for the ESD control area. When identifying work surfaces (stations), include portable stations/mats.

5.12.8.5. Certify the area meets all ESD control requirements by signing AFRL Form 30.

5.12.8.5.1. The signed AFRL Form 30 shall be posted at the entrance to the ESD control area. Where this is not feasible, the ESD program file containing the certification must be readily accessible.

5.12.8.5.2. The ESD POC will perform a certification evaluation on each area annually. If there are no changes, the POC may document the certification with their initials and date on back of form.

5.12.9. **Time Interval of ESD Control Product Testing.** The ESD POC will perform periodic ESD testing IAW TO 00-25-234, Section 7.

5.13. **Explosive Safety and Security of Explosives.** TD/711 HPW working with, handling, or storing explosive items must comply with AFMAN 31-101V1, *Integrated Defense (ID) Planning* , DoD 5100.76M, *Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives*, DESR 6055.09_AFMAN91-201, *Explosives Safety Standards*, AFMAN 21-200, *Munitions Management*, DAFMAN 21-201, *Conventional Munitions Maintenance Management*, and applicable host unit instructions.

5.14. **Safety.** TDs/Wings will comply with DAFI 91-202, *The US Air Force Mishap Prevention Program*, 91-203, all applicable 48- and 91-series Air Force Occupational Safety & Health (AFOSH) Standards, and applicable host unit instructions. TDs/Wings will establish and manage all applicable safety programs IAW AF, command, state, and local guidance.

5.15. **Tool and Equipment Management.** Tool control procedures prevent the duplication and proliferation of tools, ensure accountability, increase efficiency, and increase safety for personnel and equipment. Additional tool and equipment rules for FOD critical areas are contained in **paragraph 5.16**.

5.15.1. **CTK /Tool User.** CTK contents should be returned to CTK when no longer needed to maintain 6S and accountability of assets (see **Attachment 3)**. Develop local policy to determine security needs for each TD/Wing or location, as necessary. Maximum open close interval is annual.

5.15.1.1. Open a CTK. Ensure the annual inventory is current on the AF Form 2411 (see **paragraph 5.15.2.6**.). Local policy may stipulate more frequent tool inventories when excessive tool losses occur, or pilferage is suspected. Document more frequently required inventories by local policy. User must inventory contents and document on the AFMC Form 62 (see **Attachment 6**). Note: The AFMC Form 62 is mandatory in FOD critical areas to document inventory of the tools upon each use.

5.15.1.1.1. Exception: AFRL TDs are authorized Annual Custodian review interval and, if used, do not require the AFMC Form 62, CTK Inventory and Control Log. The AF Form 2411, Inspection Document, will serve as both the annual CTK inspection and annual sign Out/In record.

5.15.1.2. When local policy requires more than an annual inventory period, CTKs without an individual lock in a secure work center must be signed open when the work center is in use.

5.15.1.3. Tool Room CTK. User will inventory and sign open when issued.

5.15.1.3.1. Tool Room POC will inventory and sign closed on return.

5.15.1.4. A CTK Individual Item Tracking Log may be used to track tools from a distributed CTK used by more than one individual (see **Attachment 12**).

5.15.1.5. Ensure CTK is kept free from foreign objects and debris.

5.15.1.6. CTKs supporting a FOD critical area will be signed opened/closed on a daily interval using the two-person concept.

5.15.1.7. Notify the CTK Custodian when any CTK discrepancies are discovered, a tool requires replacement or an additional tool is required.

5.15.1.7.1. Users may replace consumed/expended items in CTKs up to the maximum quantity identified on the Master Inventory List (MIL).

5.15.1.8. Annotate on AFMC Form 61, *Missing, Removed Tools and Equipment*, if CTK items are lost/broken/damaged/temporarily removed (see **Attachment 5**).

5.15.1.8.1. Briefly describe the reason the item was removed.

5.15.1.8.2. When full, create a new form and transfer open entries to the new form.

5.15.1.8.3. AFMC Form 61, *Missing/Removed Tools and Equipment*, will be used to track expendables in FOD critical areas. This is not required in non-FOD critical areas.

5.15.1.9. Close a CTK. Must inventory contents and document on AFMC Form 62 (see **Attachment 6**).

5.15.1.10. Document the on-site loan of tools as follows:

5.15.1.10.1. On the losing CTK, annotate on AFMC Form 61 with who borrowed it, an estimated return date and the location where the tool is loaned in the “Reason” column.

5.15.1.10.2. Personnel borrowing the tool will add the item to AF Form 3126, *Supplemental Listing* (see **Attachment 7)** and secure the item in the CTK when the CTK is closed.

5.15.1.10.3. Borrowing user must perform all inventory and user maintenance actions.

5.15.1.10.4. The loan duration will not exceed 90 days.

5.15.1.11. For the off-site loan of tools, contact the CTK Custodian.

5.15.1.12. Prior to introducing any tools into a work area, the CTK Custodian must be notified to ensure the requirements of the tool control and management program are met.

5.15.1.13. For CTKs supporting FOD critical areas, track the exact number of consumable/ expendable items in the CTK, not the maximum quantity.

5.15.1.14. If a tool/item is lost/missing in a non-FOD critical area, conduct a thorough search for the missing tool/item. If not found, notify the CTK Custodian, work center lead and Branch Chief. Email is acceptable. See **paragraphs under 5.16** for lost tool procedures for items in FOD critical area.

5.15.1.15. Ensure torque wrench procedures are followed IAW TO 32B14-3-1-101, *Torque Indicating Devices* or the manufacturer's specifications.

5.15.2. **CTK Custodian.** The CTK Custodian is the focal point for tool control and accountability for their respective areas/CTKs. CTK Custodians will:

5.15.2.1. Ensure procedures are in place to secure CTKs when not in use.

5.15.2.2. Manage the loan of tools from CTKs.

5.15.2.3. Develop a MIL for each CTK assigned and document CTK changes on the MIL ensuring accuracy.

5.15.2.4. Annotate missing/removed/broken/damaged CTK items on AFMC Form 61 (see **Attachment 5**).

5.15.2.5. Ensure all CTKs/tools are properly marked with EIDs.

5.15.2.6. Inspect CTKs when initially established and annually thereafter. Review and sign AF Form 2411, *Inspection Document*, for each CTK during the annual inspection.

5.15.2.7. Manage the warranty replacement of tools. Contact manufacturer for warranty information.

5.15.2.8. Ensure tool rooms have process to allow access to only authorized personnel.

5.15.2.9. Implement a method to readily identify tools in CTK such as shadowing, outlines, cutouts etc.

5.15.2.10. Tools will not be issued individually from tool room/crib CTKs when the same EID is assigned to all of the tools in the CTK.

5.15.2.10.1. Exception. Specialty (one-of-a-kind, high dollar) tools from distributed CTK needed in another location in the TD will be tracked/managed using procedures in 5.15.1.4.

5.15.2.10.2. Each shadow board or cabinet containing tools will have an AFMC Form 62. Tools that have separate EIDs will be signed out individually on an AFMC Form 62 or other local developed process (paper/electronically) that is trackable, traceable/accountable.

5.15.2.10.2.1. For AFRL/RI Only: Employee's are issued ten (10) chits that are part of their CTK inventory. The chits have specific shops/numbers stamped onto each tag. The supervisor shall maintain records of issuance. Each tool room has daily opening and closing procedures documented on the AFMC IMT 62, *CTK Inventory and Control Log*. Upon opening the tool room, the CTK/Equipment users will verify all the contents of the tool room to ensure 100% accountability.

5.15.2.10.2.2. For AFRL/RI Only: The tools and/or equipment remain in the work areas or in building 101. Throughout the day tools and/or equipment are removed, and a chit is placed where the removed tool or equipment is assigned to. When tools/equipment are returned, they are placed back in the assigned location and the chit is then returned to the CTK. The chit method provides 100% accountability as far as which individual has the tool or equipment signed out, meeting the intent of the above-mentioned reference. Each shadow board has a Master Inventory Listing (MIL) next to it. The AFMC IMT 61, *Missing/Removed Tools and Equipment,* form along with the AF Form 2411, *Inspection Document*, inspection form will also be included with these documents.

5.15.2.10.2.3. For AFRL/RI Only: Chits are used when checking out tools for temporary use and only if the tool will be used outside the immediate area (defined as within sight and/or sound); when checking out tools outside of the immediate area, use AF Form 1297, *Temporary Issue Receipt.* Tools checked out on AF Form 1297 for long-term use must be physically verified at least every 30 days and a new AF Form 1297 must be issued.

5.15.2.10.2.4. For AFRL/RI Only: Chits will be accounted for at the beginning and end of each shift to ensure none were lost while performing work.

5.15.2.10.3. Tools and equipment used by facility maintenance personnel may be stored in the facility project area as long as the items can be secured.

5.15.2.10.4. Permanently removed tools will be removed from the MIL and have the location clearly identified as removed (inlay filled in, shadow removed, label pulled, etc.). If the item was identified on AFMC Form 61, close out the line item.

5.15.2.10.5. When CTKs/tools are required off site, the following procedures apply:

5.15.2.10.5.1. The items removed from the CTK will be annotated on an AF Form 3126 (see **Attachment 12**).

5.15.2.10.5.1.1. The log will constitute the MIL for the deployed items and will accompany the deployed items to the offsite location.

5.15.2.10.5.1.2. The log will be signed by the CTK Custodian to verify accuracy.

5.15.2.10.5.1.3. A copy will be kept in the CTK folder.

5.15.2.10.5.2. If the tools will augment a CTK, the individual tool items will be secured in the CTK and the CTK Individual Item Tracking Log will be added to the CTK folder.

5.15.2.10.5.3. If the tools will be stand alone, the individual tool items will be stored in a tool bag from the CTK or container if no tool bag is available and secured when not in use at the offsite location. The log, AFMC Form 61 and AFMC Form 62 will go in the tool bag when applicable.

5.15.2.10.5.4. Upon return, all items will be returned to the CTK and the CTK will be inventoried by the CTK Custodian to ensure all items are accounted for.

5.15.2.11. Notify the LOG MGR/TCM and site QA when new/additional CTKs are required, removed from service, turned in, dismantled, relocated, or no longer part of the inventory. Update the CTK listing and forward to the LOG MGR.

5.15.3. **General Program Requirements.**

5.15.3.1. CTK program templates can be found at the following location: **https://livelink.ebs.afrl.af.mil/livelink/llisapi.dll/open/15999551**

5.15.3.2. Personally procured tools are not authorized in any laboratory or industrial area. Exception: Branch chiefs may authorize personal tools for specific personnel in non-FOD areas. A memo will be maintained to identify personnel that are authorized to carry personal tools. Personal tools will be limited to essential items for personnel safety (e.g., flashlight).

5.15.3.3. Individually Issued Tools. These are tools owned by the work center but issued to individual personnel for the duration of their employment. Individually issued tools can be authorized by branch chief in non-FOD critical work centers and will not be managed through the CTK program. Individually issued tools are limited to Leatherman type multi-tools and mini- flashlights and will be permanently marked with an office symbol and number (i.e., AFRL/DSO007) for tracking purposes.

5.15.3.4. Work center tools and all equipment physically located within a CTK will be incorporated into the CTK program.

5.15.3.5. Equipment items used outside of the contiguous TD/711 HPW complex or off site will be signed out.

5.15.3.6. Procedures to procure tools can use the Blanket Purchasing Agreement (BPA) wherever applicable. **(T-2)** See AFMC Hand Tools Strategic Sourcing Ordering Guide at: **https://org.eis.afmc.af.mil/sites/HQAFMCA4/A4M/Hand_Tools/**

5.15.4. **CTK Construction, Organization and Contents.** The CTK Custodian will ensure:

5.15.4.1. All rollaway CTKs with attached or stack-on tool kits that have the same EID will be secured to each other to prevent separation.

5.15.4.2. CTKs will use a system of inlays, outlines, silhouettes, labels, or shadows in the shape of the tools for quick and easy visual inventories. No more than one item is stored in a cutout, outline, shadow, label, or silhouette except for tools issued in a set such as drill bits, Allen wrenches, apexes, or paired items (i.e., gloves and booties).

5.15.4.3. Hardware (screws, nuts, bolts, etc.) will not be stored in CTKs unless they are part of a tool in the CTK (i.e., rivets with a rivet gun) or required as tools.

5.15.4.4. If consumable/expendable items are added to a CTK, assign to a specific location, and identify them by nomenclature, size (if applicable), an asterisk (*) and maximum quantity on the MIL. When inventoried, the number of consumable/expendable items physically located in the CTK will not exceed the maximum quantity identified on the MIL.

5.15.4.5. Discard removable pocket clips from tools (e.g., flashlights, continuity testers, small screwdrivers, etc.) prior to placing in tool kits. Do not disassemble/damage tools for sole purpose of removing clips, rubber switch guards, etc.

5.15.5. **CTK Security.** CTKs will be secured (locked) when signed closed.

5.15.5.1. A CTK without an individual lock in a secure work center must be signed closed at the approved interval (daily, weekly, or annually).

5.15.5.2. Keys for CTK locks will be stored in a container (e.g., lock box, cabinet, cipher lock on the side of the CTK, etc.) in the work center.

5.15.5.3. Combination locks may be used to secure CTKs. CTK Custodians may use the same combination on multiple CTKs in a work center.

5.15.6. **CTK Documentation.**

5.15.6.1. The CTK Custodian will create a MIL for each CTK.

5.15.6.1.1. Use the standard MIL format (**Attachment 8)** for a CTK where the tools have the same EID.

5.15.6.2. Use the indexed MIL format (**Attachment 9**) for an indexed CTK.

5.15.6.3. Contents are identified by drawer/section indicating the total number and type of items in each drawer/section of the CTK.

5.15.6.4. Tools will be described on the MIL to accurately depict the actual size or type to ensure positive tool control (e.g., screwdriver, common, six inches; socket, 3/8 drive x 5/8).

5.15.6.5. Devices used to secure and open the CTK (e.g., CTK key, removable portion of cipher lock, combination lock, etc.) must be included on the MIL.

5.15.6.6. The total number of items in the CTK will be documented on the last page of the MIL.

5.15.6.7. The MIL will be signed and dated by the CTK Custodian.

5.15.6.8. Changes to the CTK will be documented by the CTK Custodian on the MIL.

5.15.6.8.1. Major changes (e.g., new CTK line items, etc.) require a new MIL.

5.15.6.8.2. Minor changes (e.g., correcting spelling errors, updating quantities, deleting line items, etc.) will be made in ink and initialed by the CTK Custodian.

5.15.6.9. Each CTK/shadow board/tool cabinet will have a folder established; six-part folders are recommended. The folder will contain at a minimum the following items.

5.15.6.9.1. Signed copy of the MIL.

5.15.6.9.2. AF Form 3126, if applicable.

5.15.6.9.3. AFMC Form 62, if applicable.

5.15.6.9.4. AFMC Form 61.

5.15.6.9.5. CTK Custodian contact information.

5.15.6.9.6. Lost tool/item procedures. (FOD Critical Area Only).

5.15.6.9.7. AF Form 2411 (unless kept electronically).

5.15.6.9.8. AFMC 310, *Lost/Found Item Report*. (FOD Critical Area only)

5.15.7. **Laboratory/Shop Equipment and Accessories.**

5.15.7.1. Equipment and accessories not physically stored in a CTK or tool room/crib are considered laboratory/shop equipment and must have designated storage locations (i.e., labeled location where the item is stored when not in use - labeled room/shelf/bin/floor space/etc.).

5.15.7.2. Establish designated storage locations for test equipment common accessories (e.g., waveguides, attenuators, fittings, cables, adapters, etc.) that are not part of a CTK.

5.15.7.3. Industrial shop machinery accessories/attachments (e.g., blades, arbors, chucks, gears, etc.) need not be controlled as tools; however, these items will be maintained in designated storage locations for accountability.

5.15.7.4. Battery/corded powered hand tools (e.g., drills, sanders, saws, Sawzalls, flashlights, etc.) will be stored in designated storage locations or incorporated into a CTK.

5.15.7.4.1. Chargers and removable batteries for powered hand tools may be stored in designated recharging locations.

5.15.7.4.2. Extra batteries (not in a charger) must be stored in a designated storage location.

5.15.7.4.3. These items will be marked, at a minimum, with the owning branch office symbol if not included in a CTK.

5.15.7.4.4. A rechargeable battery in a CTK need not be etched with the CTK EID as long as it is marked with the Branch symbol and identified on the MIL with an asterisk (*).

5.15.7.5. Tools typically used in a fabrication environment (e.g., taps and dies, drill bits, reamers, files, etc.) will be stored in designated storage locations or incorporated into the CTK program. The expendable/consumable portions of the fabrication related tools set that are incorporated into the CTK need not be etched; however, any handles or non-expendable/consumable items must be etched.

5.15.7.6. Common hand tools designated as accessories to floor/table mounted fabrication machines will be tethered to the machine. If tethering is not possible due to safety concerns, color-code the item and store it with the machine accessories.

5.15.7.7. Equipment Accessories. Small numbers of tools (20 items or less) used only as true accessories to equipment in a work center/laboratory may be treated as an accessory to the item.

5.15.7.7.1. Must be stored in a designated storage location on or near the equipment.

5.15.7.7.2. Must be complete set or have an attached inventory list.

5.15.7.7.3. Tool sets stored on optical tables will be coded to the optical table.

5.15.7.7.3.1. Label the optical table with an alphabetic character or color code to sufficiently associate the tool set to the table.

5.15.7.7.3.2. Label the tool set/caddy with the same alphabetic character or color code to sufficiently associate the tool set/caddy to the optical table.

5.15.7.7.3.3. Multiple tool sets/caddies will use an alpha-numeric combination or color code.

5.15.7.7.4. Laboratory/shop equipment and accessories taken off site will be signed out on an AF Form 3132 (see **Attachment 10**), and an AF Form 1297, *Temporary Issue Receipt*, or electronically. Maintain documentation in CTK folder until returned.

5.15.8. **Marking of Tools and Equipment.** Tools will be marked with an EID (see **Attachment 11**) in a method that is legible to the naked eye, not easily changed, duplicated, or removed.

5.15.8.1. Tools that cannot be marked with an EID will be identified on the MIL with an asterisk and will be maintained in a container marked with the EID along with the number of tools it contains and identified as such on the inventory list (*). These items include, but are not limited to:

5.15.8.1.1. Tools too small to mark (e.g., drill bits, Allen wrenches, apexes, etc.)

5.15.8.1.2. Tools made of hardened material (e.g., hardened steel punch, files, etc.).

5.15.8.2. Stand-alone tool kits and tool room/crib equipment: Use the full nine-character EID.

5.15.8.3. Tools/Containers within a CTK: The leading zeros after the World Wide Identification (WWID) (first four characters) may be deleted. Example: WROV00101 might be on the MIL and CTK, while each tool could be etched WROV101 - leading zeros (0) removed.

5.15.8.4. Devices used to secure and open the CTK (CTK key, removable portion of cipher lock, combination lock, etc.) must be marked/etched with the CTK EID and listed on the MIL.

5.15.8.5. Fiberglass Handled Hammers: Only etch on the metal head in a non-impact area.

5.15.8.6. TMDE: Use the CTK EID, AFTO Form 65, *TMDE Bar Code Label, Aluminum Stock*, or AFTO Form 66, *TMDE Bar Code Label, Polyester Stock*. If using AFTO Form 65/66, list the label number on the MIL.

5.15.8.7. CTK Padlock and Primary Key(s). Etch/mark with the parent CTK EID and list on the MIL. Tagging the key with the EID is acceptable if etching/marking is not feasible.

5.15.8.8. Tools that may be Disassembled during Use. Mark all parts with the EID. Items that are not normally disassembled during use require only one etching and one entry in the MIL (e.g., a scribe, grease gun, flashlight, etc.).

5.15.8.9. Tool Sets/Containers. Tools that are too small to mark (apex bits, etc.) will be placed in a container (**Note:** container means case, handle, etc.).

5.15.8.9.1. The tool set/container will count as one item on the CTK MIL. Identify the total number of items in the tool set/container on the MIL. For example, “10 apexes plus container” identifies 11 total pieces - 10 apexes and a container.

5.15.8.9.2. Tool sets/containers are shadowed and items counted during each inventory.

5.15.8.9.3. All tool sets/containers must have a contents list. This will be either paper/handwritten with indelible ink on the tool container itself or listed on the CTK MIL.

5.15.8.10. Titanium Engine Blade Tools. In addition to the EID, these kits will be marked "CONTROLLED ITEMS FOR TITANIUM ENGINE BLADE BLENDING ONLY."

5.15.8.10.1. Tools/expendable items used for blending will be kept in a special purpose kit separate from other tools.

5.15.8.10.2. Blue blade blending dye will also be controlled but must be kept in a flammable locker.

5.15.8.11. Oxygen Equipment Tools. In addition to the EID, mark these kits “FOR OXYGEN EQUIPMENT ONLY.” Keep tools used for working on oxygen equipment in a special purpose kit separate from other CTK tools and free of grease and oils.

5.15.8.12. PPE issued to personnel on a permanent basis and not part of a CTK (e.g., ear defenders, safety goggles) will be marked permanently with the individual's last name and office symbol.

5.15.8.13. PPE stored in a laboratory or work area and not part of a CTK (e.g., ear defenders, safety goggles) will be stored in a designated storage location and marked permanently with the office symbol.

5.15.8.14. If chits/dog tags/identification tags or similar metal tags or metal dust caps are attached to tools/equipment, they will be secured in a manner that will preclude any possibility of FOD and listed on the MIL with quantity.

5.15.8.15. Fluid Dispensers. Permanently mark grease guns, dispensing cans, spray bottles, pump oilers, and similar containers with the type of grease, fluid, or other liquids and military specification (MILSPEC) of the contents can also be listed on MIL.

5.15.8.15.1. If no MILSPEC exists, mark the item with the manufacturer's name, part number/ National Stock Number from the applicable Safety Data Sheet (SDS). Keep hoses and fittings separate for each type of grease.

5.15.8.15.2. If containers hold/dispense hazardous materials, ensure labeling requirements of AFI 90-821, *Hazard Communication*, are accomplished. Contact your Unit Environment Coordinator (UEC) for further guidance.

5.15.8.16. For odds and ends such as disposable gloves or welding goggles that cannot be marked without degrading performance or visibility, develop local policy to ensure compliance with the intent of this instruction.

5.15.9. **Annual Tool Inventories.** The CTK Custodians will:

5.15.9.1. Inspect tools under their control when the toolbox is initially established and annually thereafter. Any tools signed out to another location must be visually inspected and annotated annually. For example, if an AF Form 1297, is used, a new one must be issued.

5.15.9.2. Ensure all tools are properly shadowed, labeled, inlaid, silhouetted, and/or outlined.

5.15.9.3. Ensure all appropriate CTK control procedures apply for consumables/expendables included in the CTK.

5.15.9.4. Ensure all tools are properly marked/etched.

5.15.9.5. Ensure tools are serviceable and proper documentation/replacement action is taken for unserviceable tools. Ensure CTK contents match (by drawer and section) the CTK MIL, to include lost/broken/missing/removed item documentation. If an item is lost/broken/missing/ removed, it will be replaced by the next annual inventory, removed from the CTK inventory, or document the AFMC Form 61 with a corrective action.

5.15.9.6. Ensure all forms are available and properly filled out.

5.15.9.7. Ensure CTK is free of foreign objects/debris.

5.15.9.8. Ensure TMDE calibration is not overdue and that limited calibration labels have been initialed. Only personnel identified on the special certification roster may initial these labels.

5.15.9.9. Document on AF Form 2411 and retain this inspection electronically or maintain a copy in the CTK Folder.

5.15.9.10. Change CTK "combo-lock" when members who know the combo leave from the work center and may continue to have access to the work location.

5.15.10. **Tool Replacement Procedures.** The CTK Custodian will:

5.15.10.1. Not issue a replacement tool until receipt of the unserviceable tool. Complete a lost tool report in FOD critical areas only.

5.15.10.2. De-etch the unserviceable tool and determine if it is a warranted tool. Warranted tools will be replaced by using manufacturer's instructions.

5.15.10.3. Mark replacement tools with the EID prior to placing it in the CTK.

5.15.11. **Spare Tool Management.** The following procedures apply if spare (replacement) tools are maintained. The CTK Custodian will:

5.15.11.1. De-etch or remove old CTK markings (WWID may be retained).

5.15.11.2. Create an inventory for the spare tool location by bin and quantity.

5.15.11.2.1. Spare tool inventories will be developed utilizing the standard MIL format and will be signed by the CTK Custodian.

5.15.11.2.2. Consolidate spare tools where possible, bin like spare tools together.

5.15.11.3. Store all spare tools in a lockable cabinet, toolbox, or room/cage. Only CTK Custodians or designated representatives identified by the Branch Chief on an appointment letter (see **Attachment 17**), are authorized access to the storage location. Designated representatives are identified by the applicable Branch Chief and receive the same training as CTK Custodians.

5.15.11.4. Conduct and annotate spare tool storage locations inspections annually. Document/ maintain the inspection electronically or on AF Form 2411. At a minimum, verify the inventory against the actual contents.

5.15.12. **Lost/Missing Tool/Item Procedures.** When notified a tool/item has been lost, the CTK Custodian will notify the Branch Chief who determines if an additional search is required and if or when a replacement tool should be ordered. If the Branch Chief does not authorize a replacement, fill in the inlay and remove the item from the MIL.

5.15.13. **Training.**

5.15.13.1. All TCMs, CTK Custodians, and users will receive one-time tool control training. The LOG MGR will identify qualified trainers.

5.15.13.2. Training will be documented in the appropriate system.

5.15.14. **Locally Manufactured, Developed, or Modified Tools and Equipment.** For locally manufactured/ modified tools (LMT) assigned to a CTK in a laboratory environment, identify the modified tool on the CTK MIL as an LMT. For LMTs or equipment used on other than research and development activities, or munitions, then follow guidance below.

5.15.14.1. LMT Procedures. If an existing tool must be modified to suit a particular research or test need, approval must be obtained from the Work Center Lead **(**senior project researcher or engineer, team lead, etc.) to ensure the LMT is still functional and safe to use for the new purpose. To document this approval for the modification required, use the memorandum format (see **Attachment 13**), and forward a copy to the applicable branch chief and CTK Custodian.

5.15.14.1.1. The owning CTK Custodian will maintain records of all approved LMTs for as long as the LMT is in use. The CTK Custodian will ensure proper procedures are followed when the item must be added to a CTK.

5.15.14.1.2. If the LMT is for a one-time use, the CTK Custodian will ensure the LMT is disposed of properly and retain the approval memorandum for 90 days.

5.15.14.1.3. If a TO contains the option of an LMT, users do not need to approve or maintain records on that LMT as long as the LMT remains approved by the TO.

5.15.14.2. Equipment Manufactured/Modified by AFRL. Research equipment or SE manufactured/created for AFRL for which no TO or COTS manual exists, will be evaluated by the cognizant design engineer/scientist to determine periodic maintenance inspection (PMI) requirements. The results of this determination will be forwarded to LOG OPS personnel.

5.15.14.2.1. Any equipment with PMI requirements identified within a research/test plan will follow the performance and PMI documentation requirements contained within the research/test plan.

5.15.14.2.2. Any equipment with PMI requirements identified within a research/test plan, but without PMI documentation requirements, will document the preventative maintenance requirements on AFTO Form 244, *Industrial/Support Equipment Record,* and LDPs will be developed to perform the PMI requirements.

5.15.14.2.3. For any equipment with PMI requirements, but the requirements are not identified within a research/test plan the operator/user, and cognizant engineer/scientist will determine the PMI requirements on the equipment needed to support the research.

5.15.14.2.3.1. The operator/user will document the determination on an MFR, retain this MFR in equipment/research files, and develop LDPs to perform the PMI requirements.

5.15.14.2.3.2. The operator/user documents the identified system PMI requirements on the AFTO Form 244, as required.

5.15.15. Adjusting PM Interval Requirements. Work centers supervisors, in coordination with QA and the LOG MGR, may adjust PM intervals for infrequently used shop machinery and equipment. This allowance only applies to items that are not directly supporting a fielded weapons system (e.g., F-15, F-22, etc.). If used, the TD/Wing Director may develop a detailed adjustment approval process in the Wing/TD's local OI. Approved PM interval adjustment documentation will be kept with the equipment. The approved maintenance adjustment documentation will also be kept electronically in a centralized location or in a central binder with other equipment documentation per T.O. 00-20-1; and available to the Logistics Manager as needed.

5.15.16. Exempting Preventative Maintenance (PM) requirements for low-cost non-stock listed Support Equipment (SE).

5.15.16.1. Work center supervisors, in coordination with their Division/Branch Chief and QA and the LOG MGR, may exempt PM requirements for low cost (less than $5K replacement value) non-stock listed SE. SE may be exempted if a risk assessment indicates a residual failure index probability of 9-20. Use the Risk Assessment Charts in **attachment 18** to determine the failure index probability.

5.15.16.2. If used, the LOG MGR in coordination with the Division/Branch Chief will establish an exemption approval process for SE meeting the failure index probability criteria.

5.15.16.3. If equipment could fail in a way that poses possible injury to personnel or damage to facility then approval should be coordinated through the TD/711 HPW System Safety Office

5.15.16.4. The approved maintenance exemption documentation will be kept on the SE and in a central binder with other equipment documentation per T.O. 00-20-1. An electronic copy will be kept in a centralized location. At a minimum, the memorandum will contain following information:

5.15.16.4.1. Signed by the Branch Chief.

5.15.16.4.2. Must indicate the Residual Failure Index (RFI number).

5.15.16.4.3. Exemption start date.

5.15.16.4.4. Manufacturer's Name, Model, Serial Number, Equipment Management and Accounting System (EMAS) Label (if applicable).

5.15.16.4.5. QA and LOG MGR Coordination.

5.16. **FOD Prevention Program.** FOD is any damage to an aircraft, engine, aircraft system, component, tire, munitions, or SE caused by FOD which may or may not degrade the required safety and/or operational characteristics of the aforementioned items.

5.16.1. There are two categories of FOD areas: critical and non-critical. FOD critical areas are areas where aircraft maintenance, testing, and operations are performed (e.g., jet engine maintenance, fuel cell maintenance, major sub-assemble maintenance, and support equipment). Non-critical FOD areas are all other areas not defined previously. TD/711 HPW shall identify and document critical/non-critical FOD areas. Objective is to prevent FOD to research/test articles/equipment.

5.16.2. HQ AFMC Maintenance Division (AFMC/A4M) is the OPR for the AFMC FOD Prevention Program.

5.16.3. TD/711 HPW will assign a FOD Prevention Manager (FOD Monitor) and post their name in a prominent place within each applicable unit on a locally developed visual aid. The FOD Monitor will:

5.16.3.1. Manage the TD/711 HPW FOD program.

5.16.3.2. Maintain a copy of the FOD monitor appointment letter.

5.16.3.3. Maintain a list of approved FOD critical areas and signed FO RM assessments.

5.16.3.4. Post FOD critical visual aids to mark FOD critical areas. Visual aid template: **https://livelink.ebs.afrl.af.mil/livelink/llisapi.dll/open/16703953** .

5.16.3.5. Participate in FO investigations and ensure sound corrective actions.

5.16.4. **FOD Training.** Develop specific FOD awareness training.

5.16.4.1. Supervisors and FOD Monitor will ensure personnel who work in or transit through FOD critical areas receive initial FOD Awareness and Prevention training. Personnel who work in a FOD Critical Area will also receive an initial and annual site specific FOD training. Training will address the following:

5.16.4.1.1. Standardized training documentation requirements.

5.16.4.1.2. FOD awareness and prevention practices.

5.16.4.1.3. Initial FOD training. Supervisors shall ensure newcomers who work in or transit FOD critical areas (other than designed walk areas) are trained on work center specific FOD awareness and prevention practices prior to starting work in their assigned work area. Ensure individuals who are assigned temporary duty (TDY), transferred, or loaned from other units receive a work center FOD training prior to beginning work in their area.

5.16.4.1.4. Perform initial and final FOD incident reporting to the HQ AFMC/A4M through AFRL CLM.

5.16.5. **Rag Control.** An effective rag control program will be established if they are used. The following are procedures to ensure positive accountability and control of rags. (T-1).

5.16.5.1. A rag is defined as a remnant of cloth purchased in bulk or a standardized, commercial quality, vendor-supplied shop cloth used in general industrial, shop, and flight line operations.

5.16.5.1.1. Cheesecloth is considered a rag; however, paper products/paper towels are not considered rags.

5.16.5.2. Rags should be uniform in size and color.

5.16.5.3. Marking or identifying each shop rag with a CTK number is not necessary.

5.16.6. **Personnel in FOD-Critical Areas.** All personnel in FOD-critical areas will:

5.16.6.1. Remove personal items such as wigs, hair fasteners, rings, necklaces, chains, and other jewelry while working in these areas.

5.16.6.2. Dispose of any FO collected in the work center trash receptacles when work is completed in the area, but NLT the end of the shift/duty day. Small FO collection cans/bags may be used instead of trash receptacles.

5.16.6.3. Conduct a thorough FOD walk and inventory open CTKs supporting the FOD critical area to account for all tools prior to operating research or test articles and equipment.

5.16.6.4. Preclude FO entrapment during assembly, configuration, and installation of research systems, subsystems, components, and support articles. Ensure floors and surrounding area are kept FOD free.

5.16.6.4.1. Bag, tag with the number of items removed, and accurately identify all hardware removed.

5.16.6.4.2. Unless research assembly, configuration, or installation is ongoing, cap, plug, or cover all open ports, lines, hoses, electrical connections, ducts, tubes, and cavities on the research system and support articles to prevent FO from migrating/entering the openings. Caps and plugs must not be of the type that can be inadvertently left in place when connecting mating components.

5.16.6.4.3. Upon completion, conduct an inspection for FOs and for general cleanliness of the research system and facility.

5.16.7. **Lost/Missing Tool/Item Procedures for FOD-Critical Areas.** When notified a tool/item has been lost in a FOD critical area, the CTK Custodian will:

5.16.7.1. If the tool/item was lost on an aircraft, notify the aircraft commander or aircraft crew chief, and follow the procedures of the organization owning the aircraft.

5.16.7.2. Conduct another search, not to exceed two hours. The Division Chief will determine when it is safe to resume normal operations.

5.16.7.2.1. All activities in the FOD-critical area will be halted until the tool/item is found and start the lost/missing tool/item procedures.

5.16.7.3. The user will initiate a lost tool report using AFMC Form 310 (see **Attachment 14**), for each lost item and annotate AFMC Form 61. Forward AFMC Form 310 to all responsible parties and to the CTK Custodian.

5.16.7.4. No replacement tool will be ordered until AFMC Form 310 has been completed and on file with the CTK Custodian.

5.16.7.5. CTK Custodians forward a copy of all lost tool reports to the LOG MGR for review and filing.

5.16.7.6. Replace tool at direction of the Branch Chief.

5.16.8. **FOD-Related Incident Reporting Procedures.** Investigate each FOD incident to determine the precise cause and ensure positive corrective action is accomplished. FOD incidents are classified as preventable and non-preventable.

5.16.8.1. FODs are considered preventable except when:

5.16.8.1.1. Caused by natural environment or wildlife. This includes hail, ice, animals, insects, sand, and birds. Report this type of damage IAW DAFI 91-204, *Safety Investigations and Reports.*

5.16.8.1.2. Caused by internal engine materiel failure, as long as damage is confined to the engine.

5.16.8.1.3. Caused by materiel failure of an aircraft/equipment component if the component failure is reported as a Deficiency Report (DR) using the combined mishap DR reporting procedures of AFI 91-204 and TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution.*

5.16.8.2. All mishaps will be reported using the existing detachment mishap reporting process. **NOTE:** Do not report damage designed to be inflicted during the research/test process.

5.16.8.3. If the mishap is FO related, the Detachment Safety Manager will notify the FOD Prevention Program Manager. The FOD Prevention Program Manager will:

5.16.8.3.1. Perform an initial detail within 24 hours and send to AFRL CLM. Provide final report to AFRL CLM who will email it to AFMC/A4 workflow within two duty days of completing the FOD investigation and collecting all data. Reports shall be maintained for a minimum of 24 months (may be electronic). The FOD report format listed in **Attachment 16, Figure A16.1** shall be followed.

5.17. **Safety and Mishap Prevention Procedures.** See DAFI 21-101, AFMC Supplement, Addendum C.

5.18. **Forms.** Forms documentation training requirements will be determined at unit level. Each unit will develop a method to ensure changes to requirements are briefed. Ensure individuals assigned to the SCR are trained on forms documentation at time of appointment.

5.19. **GITA or TAA.** TD/711 HPW with assigned GITA or TAA will follow guidance published in DAFI 21-101, AFMC Supplement, Addendum C. Any TD/Wing in possession of GITA or TAA will develop a supplement to define the scope of training functions for the GITA/TAA use, functional responsibility for funding, operations, maintenance, and records management.

6. Quality Assurance (QA).

6.1. **General.** The QA office evaluates the quality of the TD/711 HPW logistics activities and manages the Evaluation and Inspection (E&I) Plan. The E&I plan provides an objective sampling of the logistics activities. QA personnel are not an extension of the logistics work force but serve primarily as technical advisors. Due to their policy and inspection responsibilities, QA personnel will not be responsible for the implementation of any logistics programs other than the QA program. AFRL/RQ Det 7 and AFRL/RW QA can act as the FOD Monitors. **NOTE:** The QA office evaluates and reports on government managed logistics activities per the LSEP. All QA Inspector findings will be briefed to the respective Branch Chief.

6.1.1. The site AFRL QA will inspect the common logistics programs and processes identified in this publication used by all AFRL and munitions (MUNS) personnel such as Tool Control, FOD, ESD, TMDE, LSEP requirements. These results will be tracked and incorporated into the QA summary like any other QA inspection.

6.1.2. MUNS QA: Due to the unique nature of RDT&E operations, no formal MUNS QA is required and no Program Evaluations (PE) or Quality Verification Inspection (QVI) will be performed. AFRL will follow the LSEP.

6.1.3. QA inspection results of contractor managed logistics programs will be provided to the respective contracting officer's representative.

6.2. **QA SUPT Responsibilities.** The QA SUPT uses QA inspection results to ensure consistent logistics practices according to technical data and management procedures. The QA SUPT ensures QA and logistics programs meet the customer's needs and the intent of higher headquarters instructions. The QA SUPT shall:

6.2.1. Serve as a Logistics technical advisor to detachment leadership and LOG MGRs.

6.2.2. Provide logistics guidance interpretation to TD/711 HPW/Det leadership and LOG MGRs.

6.2.3. Make recommendations to the AFRL CLM to enhance the effectiveness of logistics operations.

6.2.4. Determine the duties and responsibilities of the QA Inspector.

6.2.5. Train QA Inspectors IAW practices specified in this chapter.

6.2.6. Develop site logistics policy and assist in developing any logistics training material as required.

6.2.6.1. Training will include information on contract requirements and QA's role while inspecting logistics processes per the LSEP. Specific questions should be coordinated with the Contracting Officer

6.2.7. Coordinate and provide oversight on all initiatives to change published logistics instructions or processes.

6.2.8. Implement and administer the LSEP.

6.2.8.1. Assist AFRL CLM in developing the LSEP.

6.2.8.2. Review inspection report summary inputs for accuracy and content.

6.2.8.3. Initiate actions when additional attention is required to resolve adverse logistics activity trends.

6.2.8.4. Establish procedures for inspectors to document completed inspections.

6.2.8.5. Ensure a LSEP summary is published. Forward a copy of the LSEP summary to leadership and to AFRL CLM for distribution to AFRL/DS.

6.2.9. Conduct other management assessments and program evaluations of logistics and related programs as assigned.

6.2.10. Evaluate logistics management procedures, of logistics activities, including locally developed forms, publications, Operating Instructions (OIs), checklists, etc., for accuracy, intent, and necessity.

6.2.11. Coordinate with TD/711 HPW to ensure inspectors have unrestricted access to research laboratories and work centers.

6.2.12. Perform the responsibilities of the QA Inspector.

6.3. **QA Inspector Responsibilities.** QA inspectors will:

6.3.1. Evaluate the TD/711 HPW logistics activities.

6.3.2. Include explanatory comments in reports to allow supervisors to assess the health of logistics programs.

6.3.3. Assist the TD/711 HPW LOG MGR in performing logistics technical research, preparing accident/incident reports, and other tasks as necessary to ensure continuous process improvement.

6.3.4. Capture inspection and evaluation reports in an AFRL approved database. Record locally determined inspections in the Logistics Evaluations Assurance Program (LEAP), or other approved method (for example, the Annual QA Process).

6.3.5. Evaluate pertinent forms documentation.

6.3.5.1. **LSEP.** The AFRL CLM will update/revise, publish and distribute an AFRL/DS approved annual LSEP plan which will include:

6.3.5.1.1. Methods for inspecting, evaluating, and rating technician proficiency, equipment condition, etc.

6.3.5.1.2. Establish acceptable quality levels (AQL) for tasks. An AQL denotes the maximum allowable number of minor findings that a task, process or product may be charged for the evaluation to be rated "Pass." Failure to meet an AQL/standard results in the task being rated as "Fail."

6.3.5.1.3. Key task listing. None defined in AFRL currently per LSEP.

6.3.5.1.4. Routine inspection listing. See LSEP.

6.4. **E&I Plan.** Each QA office will develop an E&I plan showing areas, types and numbers of inspections and evaluations that are planned based on the instructions in **Attachment 4**. QA may inspect any of the areas listed in the LSEP if present. The QA E&I plan will be coordinated with the TD/711 HPW LOG MGRs. The E&I plan will be posted in EBS. When developing the plan, the QA SUPT will:

6.4.1. Address areas of concern identified by leadership or HHQs inspections.

6.4.2. Tailor the plan for each TD/711 HPW.

6.4.3. Review, update, formalize and distribute the E&I plan at least quarterly.

6.4.4. Document how often an area is to be inspected (monthly, quarterly, annually).

6.5. **QA Training.** The QA SUPT will develop a training plan to train all QA personnel to ensure uniformity in application of E&I techniques and philosophy. QA SUPT will develop a training plan to train all QA and QA augmentee personnel as required, identify the site QA inspector training, and Evaluator Personnel Evaluation (EPE) requirements. If no QA SUPT is assigned, the QA inspector's supervisor will perform the EPE.

6.5.1. The following are minimum QA training requirements:

6.5.1.1. Complete an EPE prior to performing QA evaluations, not to exceed 60 days of job assignment.

6.5.2. Training must cover E&I techniques, documenting inspection worksheets and actions to prevent personnel injury or equipment damage.

6.5.3. Personnel must be familiar with all tasks they evaluate/inspect.

6.5.4. Inspectors must be trained in procedures for evaluating work centers that may include contractor employees.

6.5.5. Upon completion of training, the QA SUPT and trainee will sign and date the last page of the training plan indicating that training has been completed. The training plan will be retained as long as the inspector is assigned to QA.

6.6. **Conducting Evaluations.** QA inspectors must have access to all TD/711 HPW areas. TD/711 HPW LOG MGR/Logistics Operations personnel will facilitate no/short notice access to all unrestricted areas, subject to active testing restrictions, secret and/or special access required programs. When performing evaluations, the QA Inspector will:

6.6.1. Upon entering an area to perform an inspection, identify themselves to TD/711 HPW personnel and explain what will be inspected.

6.6.2. Perform the evaluation.

6.6.3. Brief the results to the TD/711 HPW LOG MGR or representative, who will brief the Branch Chief.

6.6.4. Route the completed evaluation to the TD/711 HPW LOG MGR or designated representative.

6.7. **Conventional Munitions Program Workload Surveillance.** The following steps were developed in coordination with HQ AFMC/A4MW and A4US and are being implemented in lieu of standing up a formal munitions QA program.

6.7.1. Special Inspections (SI) will be performed on items listed in **table 2** per the LSEP. Incorporate the results into the QA summary.

6.7.2. **RW ONLY.** AFRL/RW MUNS QA will use locally developed AFRL RW CONVENTIONAL MUNS QA CHECKLIST (Current January 2023), or newer dated version, to supplement **Table 2** for Conventional MUNS QA Inspections.

Table 2. AFMC Conventional MUNS QA Program Applicability Matrix.

Unit/Org and Base			
	Applicable? Y/N		
AFMC Conventional MUNS QA Program Applicability Matrix			
Munitions Quality Specific Areas	**Edwards**	**Eglin**	**Kirtland**
1. Accountability	Y	N (custody only)	N (host duty)
2. Storage practices, security, and safety	Y	Y	N (host duty)
3. Inspection	Y	N (host duty)	N (host duty)
4. Materiel handling and test equipment	Y	Y	N (host duty)
5. Stockpile management	Y	Y (custody only)	N (host duty)
6. Training programs	Y	Y	Y
7. Infrastructure (LPS, grounds, and bonds)	Y	Y	N (host duty)

8. TCMax, CTKs, tools, and support equipment	Y	Y	N
9. Munitions assembly	N	N	N
10. Tactical Munitions Reporting System (TMRS)	N	N	N

6.8. **AFRL-Approved QA Database.** Each QA office will use a QA database to capture assessment and trend data. QA personnel enter inspection data into the LEAP and/or local database.

6.9. **Failed Evaluations.** All failed evaluations will be closed within 14 calendar days, unless the TD/711 HPW LOG MGR requests a date extension from the QA SUPT. Develop timelines that support the annual QA Process Assessment Summaries.

6.9.1. If the failed evaluation is not closed within 14 calendar days, the QA SUPT will notify the TD/711 HPW LOG MGR and Branch Chief for resolution.

6.9.2. If the failed evaluation is not closed within 21 calendar days, the QA SUPT will notify the TD/711 HPW LOG MGR and work area Division Chief for resolution.

6.9.3. If the failed evaluation is not closed within 30 calendar days, the QA SUPT will send a workflow request to the TD/711 HPW leadership requesting assistance in resolving the open evaluation.

6.10. **QA Summary.** The QA office will publish and distribute electronically a periodic LSEP summary of QA inspection data to AFRL CLM, TD/711 HPW LOG MGRs, AFRL/DSO, Division Chiefs and TD/711 HPW leadership. The summary will include the following, when applicable:

6.10.1. Trend analysis.

6.10.2. Compliance with and currency of TOs, technical data, and directives.

6.10.3. Equipment forms documentation.

6.10.4. Compliance and management of housekeeping programs.

6.10.5. Compliance with unit directed programs.

6.10.6. Ensure contracted logistics data has appropriate distribution code.

6.10.7. All COTS manual or Technical Order (TO) evaluations will be included in the QA LSEP summary.

6.11. **QA Product Improvement Program (PIP)** Establish a PIP, if applicable (i.e., DR and AFTO Form 22, *Technical Manual Change recommendation and Reply)*. This is at the TODO level.

6.12. **AFRL RW MUNS QA.** AFRL RW will develop local Conventional Munitions Quality Assurance Inspector Checklist to complete Conventional MUNS QA Inspections at AFRL/RW. Checklist is maintained locally at RW and updated as needed based on MUNS stockpile status and inspection needs.

7. TECHNICAL DATA MANAGEMENT.

7.1. **General.** Technical data will be managed as required per TO 00-5-1. When a TO is not available, COTS manuals, LDPs or CWIs will be used to support and maintain AFRL equipment. The AFRL equipment owner will ensure required COTS manuals are available and scanned into TDS.

7.1.1. Electronic Technical Orders (eTO) viewed via ETIMS will be centrally managed by WPAFB on one "AFRL TODO" account for all AFRL units. The AFRL TODO will also create and manage a TODO account for each site in case they require physical media.

7.1.2. Organizations that require classified TOs must establish a TODO account IAW TO 00-5-1 and will order and manage the classified TOs themselves.

7.1.3. Organizations that require hard copy versions of TOs must contact the TODO to establish a (paper) sub-account. These TOs must be located in an operational library.

7.1.4. TDS training is available online for TODOs, supervisors and users at: **https://livelink.ebs.afrl.af.mil/livelink/llisapi.dll/fetch/2000/210703/210704/12357229/37**
809116/10970363/16600933/16616482/16465167/TDS_Help.htm?nodeid=16468381&vernum=-2

7.2. **Center TODO (CTODO).** Responsible for AFRL technical data policy and management of TDS. Functions as Center contact for TO issues IAW AFMCI 21-301, *Technical Order System Implementation Policies*. The CTODO will:

7.2.1. Represent AFRL at AF and AFMC Centralized Technical Order Management (CTOM) committees.

7.2.2. Program Manager (PM) for TDS; test, validate and approve TDS system change requests.

7.3. **TODO.** A TODO and an alternate will be established in AFRL/RQWC and be the main focal point to manage the enterprise technical data effort. TODOs will:

7.3.1. Use the ETIMS to establish an initial distribution (ID) and to maintain the currency of all TOs in-use.

7.3.2. Load and maintain technical data documents in TDS.

7.3.3. Grant access to specific personnel for required documents when approved by a government supervisor/manager. Verify approval authority using the TD/711 HPW/Detachment/Division (consolidated if possible) approval list, as applicable.

7.3.4. Assist in locating applicable technical data.

7.3.5. Assist in the development of LDPs and CWIs.

7.4. **TDS Users.** Users will:

7.4.1. Ensure required equipment has a TO or COTS manual available for it in ETIMS or TDS. When purchasing new equipment that requires technical data, verify there is technical data for it in ETIMS or TDS. If not, the purchaser will obtain the technical data, scan it, and submit it to the TODO for upload into TDS.

7.4.2. **TO Users.** Access TOs via ETIMS or TDS.

7.4.2.1. Access eTOs (TOs ending in WA-1) in ETIMS via the following AF Portal link **https://www.my.af.mil/etims/ETIMS/index.jsp**.

7.4.2.2. Access other TOs (paper, WA-2, etc.) via the following TDS link: **https://livelink.ebs.afrl.af.mil/livelink/llisapi.dll/open/2091845**, or applicable website link provided by the TODO.

7.4.2.3. Submit TO addition requests to the TODO via TDS.

7.4.3. **COTS Manuals.** Ensure a COTS manual is available for required equipment when a TO is not applicable. If incomplete or out-of-date, the user will obtain a current version, scan it, and submit it to the TODO for update in TDS.

7.4.3.1. If research needs require the use of older versions of COTS manuals, end-users may use the required older version(s). Users are responsible for obtaining the current or proper version to match equipment configuration.

7.4.3.2. Scan the paper COTS manual or obtain an electronic COTS manual in .pdf format. Send the electronic copy of the COTS manual to the TODO. Large or multiple files should be uploaded into the applicable work center folder at **https://livelink.ebs.afrl.af.mil/livelink/llisapi.dll?func=ll&objId=4275656&objAction=browse&v**iewType=1

7.4.3.2.1. Attach any operational notes developed during setup or modification of equipment for tests at the end of the appropriate COTS manual as an addendum or working notes. Scan the notes and attach to the end of the document.

7.4.4. **LDPs and CWIs.** Write LDPs for the use or maintenance of, and CWIs for the calibration of, research or test assets when a procedure does not exist.

7.4.4.1. Contact the TODO for assistance in formatting the LDP/CWI.

7.4.4.2. Route completed LDP/CWI for Division Chief approval/signature.

7.4.4.3. Forward signed LDP/CWI to TODO for upload into TDS.

7.4.4.4. In lieu of developing an LDP for obsolete or very old items where no technical data exists, the user in conjunction with the Laboratory POC will evaluate the SE and determine if another manufactures' COTS manual can substitute in place of the unavailable manual.

7.4.4.4.1. The evaluation will include determination of PMI requirements and operational requirements. If the "like kind" manual is suitable in nature to maintain and operate the SE, it may be used.

7.4.4.4.2. This determination shall be documented on an MFR and signed by the Branch Chief.

7.4.4.4.3. The MFR and the "like kind" manual will be submitted to the TODO and uploaded into the TDS.

7.4.5. **Printing Technical Data Extracts.** The user must ensure their technical data extracts are the most current available from the source document prior to use. Print TO extracts from TDS or ETIMS if the following requirements are met.

7.4.5.1. When color is critical to understanding the TO data, local printing or reproduction must be in color.

7.4.5.2. The distribution markings and controls of the complete TO apply to any extracts. Print the TO title page whenever printing or reproducing TO extracts. The TO title page must accompany the TO extracts at all times.

7.4.5.3. Users who print out the TO extract must include the following documentation on it: initials, date printed, and date verified current.

7.4.5.4. TOs or portions of TOs printed or reproduced from superseded versions or reproduced for non-operations & maintenance (O&M) use will be marked “FOR REFERENCE ONLY,” and will not be used with operational equipment.

7.4.5.5. Destroy all TO extracts after use when no longer needed; not to exceed 30 days.

7.5. **TDS Management.** The TODO loads and maintains unclassified technical data documents in TDS using the following procedures:

7.5.1. Order paper TOs if the user requires a paper TO or an eTO is unavailable.

7.5.1.1. Upon receipt, scan and upload an electronic, text-searchable copy of the document to TDS.

7.5.1.2. Post changes and supplements IAW TO 00-5-1 to scanned TOs and update the metadata fields in TDS to reflect currency.

7.5.2. Load COTS manuals (electronic copy from manufacturer or scanned, text searchable copy of hard copy manual) into TDS.

7.5.2.1. Use the COTS manual naming convention located at: **https://livelink.ebs.afrl.af.mil/livelink/llisapi.dll/open/17746980.**

7.5.2.2. Enter a distribution code of “P” for proprietary data and “N” for nonproprietary data. The TDS *TODO Reference Guide* contains detailed information on this process/procedure and is located at: **https://livelink.ebs.afrl.af.mil/livelink/llisapi.dll/open/17742694.**

7.5.2.3. For proprietary data, TODOs will obtain a “permission-to-host” document from the owner of the proprietary data prior to posting the document in TDS.

7.5.2.3.1. Upon receipt, upload the document in the applicable TDS Manufacturers Consent to Host folder.

7.5.2.3.2. When contact cannot be established with the owner of proprietary data (i.e., - no longer in business, etc.), the TODO will post a document within TDS that records the efforts to establish contact.

7.5.3. Assist in the development of LDPs and CWIs.

7.5.3.1. The LDP naming convention can be found at: **https://explorer.ebs.afrl.af.mil/livelink/llisapi.dll/open/17746980**.

7.5.3.2. The LDP templates can be found at: **https://explorer.ebs.afrl.af.mil/livelink/llisapi.dll/open/LDP_Templates.**

7.6. **Time Compliance Technical Order (TCTO) Process.** A TCTO is an AF-mandated modification or improvement of an equipment item or system. Although TCTOs rarely apply to AFRL work centers, TODOs and Work Center Leads will implement the following procedures when applicable.

7.6.1. TODOs will:

7.6.1.1. Establish a subscription to the applicable TCTO header in ETIMS.

7.6.1.2. When a TCTO is received, communicate with the QA office and the affected work center for a review of applicability.

7.6.1.2.1. If the TCTO does not apply, record non-applicability in the corresponding ETIMS note block.

7.6.1.2.2. If the TCTO applies, record receipt on AFTO Form 95, *Significant Historical Data*, IAW TO 00-20-2, *Maintenance Data Documentation*, in lieu of Reliability & Maintainability Information System (REMIS). To furnish a means of flagging the type of TCTO, the following codes will be entered at the end of the TCTO title in the Remarks block: immediate action "I," urgent action "U," routine action "R" and safety "S."

7.6.1.2.3. Update AFTO Form 95 upon completion of the TCTO.

7.6.2. Work Center Leads will:

7.6.2.1. Order any parts/kits per the TCTO instructions and notify TODO when parts are received.

7.6.2.2. Notify the TODO upon completion of the TCTO.

7.6.2.3. Obtain AFTO Form 95 from the TODO and attach it to the item upon return to the product center or supply system.

8. Additional Requirements and Programs.

8.1. **6S Process.** The 6S process is a standard industry practice that supports Continuous Process Improvement (CPI), the lean approach of reducing waste in a work environment and organizing the workplace to be as efficient and value-added as possible. An essential update to the 5S program, 6S adds the vital stage of Safety to Lean manufacturing's foundational method (see **Attachment 3**).

SCOTT A. CAIN,
Brigadier General, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DoD 5100.76-M, *Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives (AA&E)* 17 April 2012

DAFI 21-101 AFMCSUP Addendum C AFMCGM2023-01 *Air Force Research Laboratory (AFRL) Logistics Maintenance Management*, 01 May 2023

AFMAN 21-113, *Air Force Metrology and Calibration Management (AFMETCAL)*, 29 April 2020

AFRLI 61-108, *Management and Control of Technology Development for AFRL*, 11 January 2022

DAFMAN 21-201, *Munitions Management*, 3 May 2022

AFMAN 31-101V1, *Integrated Defense (ID) Planning*, 12 March 2020

AFI 90-821, *Hazard Communication (HAZCOM) Program*, 13 May 2019

DAFI 91-202, *The US Air Force Mishap Prevention Program*, 12 March 2020

DAFMAN 91-203, *Air Force Occupational Safety Fire and Health Standards*, 25 March 2022

DAFI 91-204, *Safety Investigations and Reports*, 10 March 2021

AFMAN 21-200, *Munitions and Missile Maintenance Management*, 9 August 2018

DESR6055.09 AFMAN 91-201, *Explosives Safety Standards*, 28 May 2020

AFRLI 61-101, *AFRL Equipment and Other Laboratory Asset Management*, 25 July 2023

DAFPAM 90-803, *Risk Management (RM) Guidelines and Tools*, 23 March 2022

ANSI/ASQ Z1.4-2008, *Sampling Procedures and Tables for Inspection by Attributes,* 2018

ANSI/ESD S20.20, *Protection of Electrical and Electronic Parts, Assemblies and Electronic Parts, Assemblies and Equipment,* 2021

TO 00-5-1, *AF Technical Order System,* 11 September 2023

TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures,* 26 September 2022

TO 00-20-2, *Maintenance Data Documentation,* 23 Aug 2023

TO 00-20-14, *Air Force Metrology and Calibration Program*, 28 February 2023

TO 00-25-234, *General Shop Practice Requirements for the Repair, Maintenance, and Test of Electrical Equipment,* 27 Oct 2021

TO 34-1-3, *Inspection and Maintenance Machinery and Shop Equipment*, 27 August 2019

TO 00-35D-54, *USAF Deficiency Reporting, Investigation and Resolution*, 15 August 2022

TO 32B14-3-1-101, *Torque Indicating Devices*, 11 Aug 2023

Prescribed Forms

AFRL Form 30, *ESD Control Survey/Certification*

Adopted Forms

DAF Form 847, *Recommendation for Change of Publication*

AF Form 1297, *Temporary Issue Receipt*

AF Form 2411, *Inspection Document*

AF Form 3126, *General Purpose (Supplemental Listing and Distributed CTK Individual Item Tracking Log)*

AF Form 3132, *General Purpose (Non-CTK Equipment Sign Out Sheet)*

AFTO Form 22, *Technical Manual Change Recommendation and Reply*

AFTO Form 65, *TMDE Bar Code Label, Aluminum Stock*

AFTO Form 66, *TMDE Bar Code Label, Polyester Stock*

AFTO Form 95, *Significant Historical Data*

AFTO Form 244, *Industrial/Support Equipment Record*

AFMC Form 61, *Missing/Removed Tools and Equipment*

AFMC Form 62, *CTK Inventory and Control Log*

AFMC Form 310, *Lost/Found Item Report*

Abbreviations and Acronyms

6S—Sort, Straighten, Shine, Standardize, Sustain and Safety

AFMAN—Air Force Manual

AFMC—Air Force Material Command

AFMETCAL—Air Force Metrology and Calibration

AFOSH—Air Force Occupational Safety and Health

AFRIMS—Air Force Records Information Management System

AFRL—Air Force Research Laboratory

AFSO21—Air Force Smart Ops for the 21st Century

ANSI—American National Standards Institute

AQL—Acceptable Quality Levels

BPA—Blanket Purchasing Agreement

CY—Calendar Year

CAC—Common Access Card

CLM—Center Logistics Manager

COR—Contracting Office Representative

COTS—Commercial-off-the-Shelf

CPI—Continuous Process Improvement

CTK—Composite Tool Kits

CTODO—Center Technical Order Distribution Office

CTOM—Centralized Technical Order Management

CWI—Calibration Work Instruction

DAF—Department of the Air Force

DAU—Defense Acquisition University

DET CC—Detachment Commander

DR—Deficiency Report

EBS—Enterprise Business System

E&I—Evaluation and Inspection

EID—Equipment Identification Designator

EPE—Evaluator Proficiency Evaluation

ESD—Electrostatic Discharge

ESDS—Electrostatic Discharge Sensitive

ETIMS—Enhanced Technical Information Management System

eTO—Electronic Technical Orders

FO—Foreign Object

FOD—Foreign Object Damage

GITA—Ground Instructional Training Aircraft

GSU—Geographically Separated Unit

HHQ—Higher Headquarters

IAW—In Accordance With

ID—Initial Distribution

LDP—Locally Developed Procedure

LEAP—Logistics Evaluation Assurance Program

LMCA—Logistics Material Control Activity

LMT—Locally Manufactured/Modified Tool

LOG MGR—Logistics Manager

LOG OPS—Logistics Operations

LRU—Line Replaceable Unit

LSEP—Logistics Standardization and Evaluation Program

MIL—Master Inventory List

MILSPEC—Military Specification

MIS—Maintenance Information Systems

MFR—Memorandum for Record

MUNS—Munitions

NPC—No Periodic Calibration

O&M—Operations and Maintenance

OI—Operating Instruction

OPR—Office of Primary Responsibility

REMIS—Reliability & Maintainability Information System

RM—Risk Management

PE—Program Evaluation

PIP—Product Improvement Program

PM—Program Manager

PMEL—Precision Measurement Equipment Laboratory

PMI—Periodic Maintenance Inspection

POC—Point of Contact

PPE—Personal Protective Equipment

QA—Quality Assurance

QA SUPT—Quality Assurance Superintendent

QVI—Quality Verification Inspection

R&D—Research and Development

RDS—Records Disposal Schedule

RDT&E—Research, Development, Test, and Evaluation

REMIS—Reliability & Maintainability Information System

RM—Risk Management

RS—Research Site

SDS—Safety Data Sheet

SCR—Special Certification Roster

SE—Support Equipment

SI—Special Inspection

SSE—Systems Safety Engineer

STINFO—Scientific and Technical Information

TA—Transient Aircraft

TAA—Training Aid Aircraft

TCM—Tool Control Manager

TCTO—Time Compliance Technical Order

TD—Technology Directorate

TDS—Technical Data System

TDY—Temporary Duty Assignment

TMDE—Test Measurement and Diagnostic Equipment

TMRS—Tactical Munitions Reporting System

TO—Technical Order

TODO—Technical Order Distribution Office

UEC—Unit Environment Coordinator

USSF—United States Space Force

WPAFB—Wright Patterson Air Force Base

WWID—World Wide Identification

Terms

Air, Space, and Aerospace Equipment—Defined as equipment used and maintained to meet the Air Force research, development, test, and evaluation mission. It may include aircraft, missiles, space equipment, communications-electronic equipment, RDT&E equipment, avionics, engines, training equipment, SE, aircraft and space ground equipment, sound suppressor systems, TMDE, and major end-items or systems of equipment.

Common Tools—These items include, but are not limited to, wrenches, sockets, hammers, screwdrivers, pliers, torque wrenches, etc.

Composite Tool Kits (CTK)—A controlled area or container used to store tools or equipment and maintain order, positive control, and ease of inventory. CTKs are assembled as a kit and designed to provide quick, easy visual inventory and accountability of all tools and equipment. CTKs may be in the form of a toolbox, a shadow board, shelves, system of drawers (Stanley Vidmar, Lista, etc.), cabinets, or other similar areas or containers. The CTK contains tools and equipment necessary to accomplish maintenance tasks, troubleshooting, and repair. CTKs contain tools necessary to accomplish RDT&E operations/activities.

CTK Equipment—Equipment physically included in a CTK and treated the same as a CTK.

Consumable Item—Items used in conjunction with tooling/equipment, yet after limited usage do not maintain their original configuration and are considered used up. Examples are safety wire, solder, tape, sanding disk, string, chalk, etc.

Designated Storage Location—Identifies the labeled storage location of an item when not in use. Common items requiring a designated storage location include equipment, accessories, attachments, battery chargers, rechargeable batteries, etc.

Electrostatic Discharge (ESD)—The rapid, spontaneous transfer of electrostatic charge induced by a high electrostatic field. **Note:** Usually, the charge flows through a spark between two bodies at different electrostatic potentials as they approach one another.

ESD Controls—Procedures, policies, equipment, and practices that, when utilized, lessen the potential for ESD damage.

ESD Control Survey—An inspection performed and documented by the ESD POC identifying work areas requiring ESD controls and the quantities and types of controls needed to prevent damage to ESDS items.

ESD Control Area—An area established to minimize the impact of ESD damage to electrical and electronic parts, assemblies, and equipment per TO 00-25-234, Ch 7.

Electrostatic Discharge Sensitive (ESDS)—Any equipment, circuit, electronic component, or device susceptible to damage from electrostatic discharge.

Expendable Item—Items that become unfit for use and must be periodically replaced. Examples include items such as blades, apexes, drill bits, reamers, etc.

External Contractor—Contractor that does not permanently reside within AFRL facilities/organizations or a contract that is not managed by AFRL.

Foreign Object (FO)—A substance alien to aircraft; engines; space systems; support equipment; research, development, test and evaluation equipment, systems; or components thereof that has been allowed to invade the product.

Foreign Object Damage (FOD)—Any damage to an aircraft; engine; space system; support equipment; RDT&E equipment, systems, or components thereof caused by an external FO that may degrade the required safety or operational characteristic of the item.

FOD-Critical Area/Process—Any work center conducting research, test, development, integration, or manufacturing where a misplaced/dropped tool/item could reasonably be expected to cause serious damage to personnel/equipment or adversely affect RDT&E mission accomplishment.

Housekeeping—Maintain the work center in a clean, orderly condition. This includes cleaning up after yourself, putting trash in trash containers, using drip pans as applicable, sweeping floors to keep them free of debris, cleaning up fluid spills immediately, and returning items back to their designated locations when not in use.

Individually Issued Tools—Tools owned by the work center but issued to individual personnel for the duration of their employment. Individually issued tools can be authorized by Branch Chief in non-FOD critical work centers and will not be managed through the CTK program. Individually issued tools are limited to Leatherman-type multi-tools and mini-flashlights.

Internal Contractor—Contractors that permanently reside within AFRL facilities/organizations and are issued a Common Access Card (CAC); are integrated into day-to-day operations, or the contract is managed by AFRL.

Laboratory/Shop Equipment—Equipment assigned for use in laboratory/work center. This equipment is not physically part of the CTK but must have an identified storage location.

Like Items—Items that perform the same function and are similar in nature.

Master Inventory List (MIL)—Primary source document for inventory of CTKs. The MIL indicates the total number of items in each drawer or section of the tool kit.

Non-FOD Critical—Work areas determined not to meet the criteria required for FOD critical areas.

Personal Tools—Tools procured and/or owned by individual personnel, not the work center. Personally procured tools are not authorized in any laboratory or industrial area.

Site—A geographic location and surrounding local area where AFRL has an operation.

Special Tools—Items or tools designed and developed to perform a peculiar maintenance operation on a specific end item of equipment or component.

Supplemental Listing—The supplemental list is a listing of all items kept in CTKs that are not listed on the MIL. A supplemental listing will be used when specialty (one-of-a-kind, high dollar) tools are needed in another location in the wing.

Technical Performance Measures (TPMs)—TPMs measure attributes of a system or elements or a system to determine how well it is satisfying, or expected to satisfy, a technical requirement or objective. TPMs are typically developed directly from measures of performance to characterize physical or functional attributes relating to evaluation of the technical requirements or objectives. These measures are used to assess interim technical progress, compliance to requirements or objectives or technical risks.

Tools—Those items issued to a work center or to an individual in the performance of maintenance, inspection, creating, or working on RDT&E operations, activities, research equipment or research rigs.

Tool Storage Facility/Tool Room/Tool Crib—A controlled area within a work center designated for storage and issue of tools and equipment.

Two—Person Concept for Completing AFMC Form 62, Sign In/Out Process - When closing a CTK, a different user will inventory contents and document this inventory on the AFMC IMT 62. The same individual that signs out a CTK cannot sign it back in. A second party or on-duty supervisor inspection of the tool kit must be accomplished. Notify the appropriate CTK Custodian if there are any discrepancies.

Attachment 2

WAIVER/CHANGE REQUEST FORMAT

A2.1. The following format will be used in submitting waiver requests or recommended changes to any logistics publication without a defined process. These requests will be submitted in a memorandum format and shall include the following information.

A2.1.1. Submitting Organization.

A2.1.2. Date.

A2.1.3. Subject: (Waiver or Change Request).

A2.1.4. Priority of Request: (Urgent or Routine).

A2.1.5. Reference: Include chapter, paragraph, and line number or Table or Figure number.

A2.1.6. Proposed waiver or change requested.

A2.1.7. Background and Discussion: (Unique circumstances or history leading up to request; rationale for waiver or change and any workarounds).

A2.1.8. Recommendation: Desired outcome and identify any alternative processes that will be used.

A2.1.9. Applicability and Duration: (Unit(s) to which waiver and change applies and duration of waiver).

A2.1.10. POC (name, office symbol, DSN, and e-mail).

Attachment 3

AFSO21 6S PRIMER

Figure A3.1. AFSO21 6S PRIMER.

A Review of How AFSO21 Works

AFSO21 has the purpose of "lean improvements through involvement."

1. You know your processes the best;

2. Your people know their workplaces the best

3. The AFSO21 approach facilitates improvement to your processes and workplaces with:

1. Methodologies that work
2. Your people's involvement;
3. Your people's expertise

Formal Events Have Begun

AFMC has moved ahead on three quick-win initiatives, involving some of your people:

1) Certification & Accreditation.

2) Vehicle Registration.

3) HQ AFMC Tasking process

AFMC has determined the first priority improvement initiatives involving more of your people:

1) T&E Enterprise.

2) Core Unit Type Code Basing

3) Integrated Training

4) Source Selection

But Lean Thinking Can Begin Without Formal Events

One of the tools of AFSO21 is "6S." While it can be used as a tool in an event, it can also be used by each of us to make our jobs leaner and more productive. First, let's see what 6S means, then, let's see how it can be used outside of formal events.

6S is about eliminating waste and maximizing value-added work (the work process, not the workplace).

To this end, 6S uses its steps to create and maintain an organized, clean, safe, and efficient setting that enables the highest level of value-added performance. This means eliminating search, travel, transporting materials, inventory, asking others for help and hazards.

6S achieves its ends by introducing organization and orderliness, eliminating unneeded materials, and establishing self-discipline. In a sense, it applies some principles of "time management" to your physical workspace and to your virtual workspace (computer). 6S includes:

✓ **Sorting**: sorting all materials, tools, equipment, supplies, and information into two categories – needed and not needed -- then, discarding or disposing of what is not needed. *"When in doubt, throw it out!"*

✓ **Straighten/Systematize**: systematically arrange needed items for the most efficient and effective retrieval and use. Everything, including furniture, is located convenient to the point of use. *"A place for everything and everything in its place!"*

✓ **Shine or Sweep:** establish a regular cleaning and preventative maintenance schedule; prevent contamination; remove reasons for dirt, debris, and damage. *"While polish is a product of pride, polish produces pride!"*

✓ **Standardize:** standardize work practices with easy-to-follow procedures. Standards make any abnormality obvious and help prevent inefficiencies and quality variations.

Standards include visual measures for maintaining themselves. *"Recognize what* needs *to be done and see at-a-glance how it should be done!"*

✓ **Self-Discipline/Sustaining:** prevent returning to the old way; develop the new way into habits; ensure there is continuous review of changes and application of standards. 2207 *"Sustaining 6S is second nature."*

Safety (added to the original 5S): create and maintain a safe workplace. We should already have formal programs for the physical part of safety; we must also prevent people from becoming emotionally wounded to where they cannot be effective in their work processes. *"Injuries hinder production, but hurt people hurt people."*

Figure A3.2. 6S Evaluation Form for your Email and Data Files Sort.

Sort (Organization)	**Distinguish between what is needed & not needed.** Have all unnecessary e-mail items, old files been removed? Does a procedure exist for removing or archiving unneeded items?
Straighten (Orderliness)	**A place for everything and everything it its place.** Have all unnecessary e-mail items, old files been removed? Does a procedure exist for removing or archiving unneeded items?
Shine (Cleanliness)	**Cleaning and looking for ways to keep it clean** Are file structures clean and mutually exclusive? Are there procedures for cleaning out files routinely? Are they followed?
Standardize (Adherence)	**Standardizing your work practices** Is all your file structure visible? Do you drag & drop upon first viewing? Do you follow set times for archiving, deleting? Are they on the calendar?
Sustain (Self-Discipline)	**Following the rules to sustain** Are you faithfully following these procedures regularly? Do you have a way of holding yourself accountable built in?
Safety (Self-Preservation)	**Maintaining a safe work place (stress wise)** Have you given yourself time to learn how to 6S? Can you get help? Do you prioritize time to keep yourself 6S'd? What make it priority?

Attachment 4

QA SAMPLING PLAN

A4.1. Introduction. The sampling plan illustrated in **Table A4.1** is derived from American National Standard Institute (ANSI)/ASQ Z1.4-2008, *Sampling Procedures and Tables for Inspection by Attributes*.

A4.2. Sampling Plan.

A4.2.1. TD/711 HPW Population. The number of end items in a category will be used as the TD/711 HPW population. For example: total number of CTKs, TMDE, SE, etc.

A4.2.2. Average QA Pass Rate. The table contains 5 columns, each corresponding to a different average QA pass rate. Inspection areas with low QA pass rates are sampled at a much higher rate than those with consistently high QA pass rates.

Table A4.1. Sampling Plan.

TD/711 HPW Population		Average QA Pass Rate (previous 6 months)				
		<87%	87-89.99%	90-94.99%	95-99.99%	100%
1	8	2	2	2	1	1
9	15	2	2	2	1	1
16	25	2	2	2	1	1
26	50	3	3	2	2	1
51	90	5	4	3	2	1
91	150	8	7	5	4	2
151	280	13	11	8	6	3
281	500	20	16	12	8	4
501	1,200	32	26	20	13	7
1,201	3,200	50	40	30	20	10
3,201	10,000	80	64	48	32	16
10,001	35,000	125	100	75	50	25
35,001	150,000	200	160	120	80	40
150,001	500,000	315	252	189	126	63
500,001		500	400	300	200	100

A4.3. Using the Sampling Plan. The QA sample rate will be re-calculated annually at a minimum. For each inspection area, cross reference the inspection area's average QA pass rate for the previous year with the inspection area's TD/711 HPW population on the sampling plan table.

A4.4. Business Rules. Business rules are applied to inspection categories to document how you are applying the ANSI to each category. Business rules are structured to limit scheduled inspections and to prevent over inspecting.

A4.4.1. **CTKs.** Inspections ≤ 100% of population per calendar year (CY).

A4.4.2. **TMDE.** Use population/12 for sampling plan, inspections ≤ 100% of population per CY.

A4.4.3. **FOD.** Inspections ≤ 100% of population per quarter.

A4.4.4. **VEHICLES.** Inspections ≤ 100% of population per quarter.

A4.4.5. **SUPPORT EQUIPMENT.** Inspections ≤ 100% of population per CY.

A4.4.6. **ESD.** Inspections ≤ 100% of population semi-annually.

A4.4.7. **TDS.** Use population/12 for sampling plan, inspections ≤ 100% of population per CY.

A4.4.8. **EM.** Use population/12 for sampling plan, inspections ≤ 100% of population per CY.

A4.4.9. **SUPPORT STOCK.** Inspections ≤ 100% of population per CY.

A4.4.10. **FACILITY.** Inspections ≤ 100% of population per CY.

A4.5. Deviations. There may be instances when it will be necessary to deviate from the sampling plan table results. Some examples include trend analysis results, TD/711 HPW requests and inspection results. Deviations should be infrequent and of limited duration. Document all deviations, including reason and duration, in the QA summary report.

Attachment 5

COMPLETION INSTRUCTIONS FOR AFMC FORM 61

A5.1. CTK NO. Enter the EID for the distributed CTK.

A5.2. SQUADRON. Enter the TD/711 HPW identifier.

A5.3. WORK CENTER. Enter the branch identifier.

A5.4. NOMENCLATURE. For distributed CTKs, enter the description of the item. For dispatchable and shadow board/cabinet items, enter the tool EID and a brief item description (e.g., WPWS00001/Pipe Wrench). See **Figure A5.1**.

A5.5. REASON. Enter the reason the item was removed or to identify a broken item that has not been removed. For example, use broken and removed; broken not removed; or removed for Precision Measurement Equipment Laboratory (PMEL).

A5.6. VERIFIED BY. Print the first initial of the first name and last name of the person identifying/removing the item or loaning the specialty item.

A5.7. DATE OUT. Enter the date the item is removed or identified.

A5.8. DATE REPLACED. Enter the date the item is returned or replaced.

A5.9. INITIALS. For broken items, enter the CTK Custodian initials. For specialty items, enter the initials of the person replacing the item.

Figure A5.1. Sample AFMC Form 61.

MISSING/REMOVED TOOLS AND EQUIPMENT

CTK NO.	SQUADRON	WORK CENTER
WPP0023E	AFRL/RQOEE	RQOEE

NOMENCLATURE	REASON	VERIFIED BY	DATE OUT	DATE REPLACED	INITIALS
Screwdriver	broken/removed	M. Washington	20121010	20121201	MJW

AFMC IMT 61, 20060119

Attachment 6

COMPLETION INSTRUCTIONS FOR AFMC FORM 62

A6.1. CTK NUMBER. Enter the EID for the distributed CTK.

A6.2. DATE. Enter the current date.

A6.3. EMPLOYEE NUMBER. Enter N/A. A vertical arrow may be drawn from the second row to the last row indicating the entry is the same for all rows.

A6.4. TOOL NUMBER AND NOMENCLATURE. For distributed CTKs, enter the EID. Draw a vertical arrow from the second row to the last row indicating the entry is the same for all rows. For dispatchable and shadow board/cabinet items, enter the tools EID and a brief item description (e.g., WPWS00001/Pipe Wrench). See **Figure A6.1**.

A6.5. CTK/TOOL DESTINATION. For distributed CTKs, enter the building and room where the CTK is located. For dispatchable and shadow board/cabinet items, enter the destination for the items. Use building/room or describe the destination (e.g., building 45/room 051 or building 65, Main Floor).

A6.6. OUT TIME/INITIALS. Enter the date and time the item is signed out/opened and initials for the individual accepting responsibility for the item.

A6.7. IN TIME/INITIALS. Enter the date and time the item is signed in/closed and initials for the individual accepting the returned item/closing the CTK.

Figure A6.1. Sample AFMC Form 62.

CTK INVENTORY AND CONTROL LOG				CTK NUMBER	
DATE	EMPLOYEE NUMBER	TOOL NUMBER AND NOMENCLATURE	CTK/TOOL DESTINATION	OUT TIME/INITIALS	IN TIME/INITIALS
20060112	N/A	CTK box number	Where box is		

Attachment 7

COMPLETION INSTRUCTIONS FOR AF FORM 3126

A7.1. CTK. Enter the EID for the distributed CTK receiving the loaned item.

A7.2. EID/Tool Description. Enter the EID and a brief item description (e.g., WPWS00001/Pipe Wrench) where the item came from. The EID is on the item. See **Figure A7.1**.

A7.3. Date Added. Enter the date the loaned item is placed in the CTK.

A7.4. Employee Signature. Enter the legible signature employee placing the item in the CTK.

A7.5. Date Returned. Enter the date the item is returned to its original CTK.

A7.6. Returning Employee Signature. Enter the legible signature of the employee returning the item to its original CTK.

Figure A7.1. Sample Supplemental Listing.

CTK	Supplemental Listing Loaned items on the list shall not exceed 90 days in duration.			
EID/Tool Description	Date Added	Employee Signature	Date Returned	Returning Employee Signature

AF IMT 3126, 20060215, V1 GENERAL PURPOSE (8 1/2 x 11")

Attachment 8

MIL FORMAT

A8.1. A different format may be used, but it must address the items identified in **Table A8.1** below. Note: The Part Number and Manufacturer fields are optional.

Table A8.1. Standard Mil Format with Same EID.

	CTK EID: WPMLO0001	**Org: RXOF**		**Tool EID: WPMLO1**	
Location	**Tool Description**	**C/E?**	**Part Number**	**Manufacturer**	**Qty**
	CTK KEY (and padlock if used)		**UNK**	**UNK**	**1**
DRAWER 1	11/32 NUTDRIVER		UNK	CHANNELLOCK	1
DRAWER 1	Multi tip driver (Driver + 8 bits)		MEGAPROOF	CULLY	2
DRAWER 1	Multi tip driver (Driver + 4 bits + 3 bit holders)*		32477	KLEIN	1
DRAWER 1	SCREW STARTER		UNK	UNK	1
DRAWER 1	WIRE MARKER TAPE (10 Rolls+Dispenser)*	C	50716	3 M	1
DRAWER 1	TOTAL				**6**
DRAWER 2	Empty				**0**

DRAWER 3	15-13MM OPEN END WRENCH		44507	CRAFTSMAN	1
DRAWER 3	15-13MM OPEN END WRENCH (LMT)		44507	CRAFTSMAN	1
DRAWER 3	15" FLAT FILE With Handle		UNK	NICHOLSON	1
DRAWER 3	25' TAPE MEASURE		UNK	KOBALT	1
DRAWER 3	Nutdriver / Screwdriver **Set (13+case) Contains:** Handle, Extension, # 1 Phillips, # 3 Phillips, 3/16" Straight, 1/4" Straight, 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/16 Hex		99PS-50	Xcelite	1
DRAWER 3	1/4" DRIVE SOCKET SET (24pc + case)		9-34804	CRAFTSMAN	1
DRAWER 3	HOLE SAW KIT (14pc + case)*	E	49-22-4066	MILWAUKEE	1
DRAWER 3	TOTAL				**7**
DRAWER 4	RIVET GUN + 4 TIPS* + WRENCH		UNK	STANLEY	1
DRAWER 4	DEBURRING TOOL WITH TIP*	E	UNK	UNK	1
DRAWER 4	15" FLASHLIGHT (2 bulbs max)		LEGEND	BRINKMAN	1
DRAWER 4	6" RAZOR KNIFE WITH BLADE* (6 blades max)	E	UNK	ALLWAY	1
DRAWER 4	15" HACKSAW WITH BLADE*	E	UNK	LAWSON	1
DRAWER 4	ROLL OF ELECTRICAL TAPE	C	UNK	UNK	1
DRAWER 4	TOTAL				**6**

DRAWER 5	27 OZ. DEAD BLOW HAMMER		593573	HUSKY	1
DRAWER 5	12" "L" SQUARE		45-912	STANLEY	1
DRAWER 5	DRILL INDEX (29pc + case)*	E	UNK	UNK	1
DRAWER 5	12" LEVEL SQUARE (2 PCS) NO SCRIBE		UNK	CRAFTSMAN	1
DRAWER 5	DRILL/TAP/DEBURR BIT SET (6pc+ case)	E	UNK	GREENLEE	1
DRAWER 5	ADJUSTABLE MIRROR		HT-S2	ULLMAN	1
DRAWER 5	ALLEN WRENCH SET METRIC (9pc + case)*		UNK	ALLEN	1
DRAWER 5	METRIC ALLEN WRENCH SET		88015	CHESCO	1
DRAWER 5	TOTAL				**8**
DRAWER 6	Torque Wrench 3/4" drive (1pc+Case)		96355	Central Tools Inc.	1
DRAWER 6	WIRE STRIPPERS		UNK	GREENLEE	1
DRAWER 6	DIGITAL METER + 2 PROBES * (TMDE:C835265)		23 III	FLUKE	1
DRAWER 6	PEN STYLE DMM+ PROBE* (TMDE:C835268)		DM73B	METERMAN	1

DRAWER 6	14.4V Cordless Drill + Battery*		SID 144-A	HILTY	1
DRAWER 6	HAMMER DRILL WITH CHUCK KEY		5370-1	MILWAUKEE	1
DRAWER 6	Leather Electrical Gloves (1 PAIR)		40021	Klein	1
	TOTAL				**7**
	TOTAL TOOLS CTK WPMLO00001				**35**

CTK Custodian Signature_____ Date:_____

Attachment 9

INDEXED MIL FORMAT

A9.1. A different format may be used, but it must address the items identified in **Table A9.1** below. **NOTE:** The Part Number and Manufacturer fields are optional.

Table A9.1. Indexed Mil Format with Indexed EID.

Bldg 655 Rm 038		**Org: RXLMP**			**Cabinet CTK example**	
Location	**Tool EID**	**Tool Description**	**C/E?**	**Part Number**	**Manufacturer**	**Qty**
	CAB 1	**CTK KEY**				**1**
Backwall	WPRXOF001	24" Pipe Wrench		UNK	Task Force	1
Backwall	WPRXOF002	Strap Wrench, 17 7/8" Length, 1 3/4" Wide Strap		NO. 5	Ridgid	1
Backwall	WPRXOF003	Crowbar, 18 1/2" Length		UNK	UNK	1
Backwall	WPRXOF004	Pry Bar, 30" Length, Tongue End		UNK	UNK	1
Backwall	WPRXOF005	Wrench, Adjustable, 24"		UNK	Pittsburgh	1
Backwall	WPRXOF006	Wrench, Open End, 1 1/2"		UNK	UNK	1

Backwall	WPRXOF007-8	C-Clamp, 4 1/4" Opening, 2 1/8" Depth		NO. 104	**Armstrong**	2
Backwall	WPRXOF009-12	C-Clamp, 4" Opening, 1 3/4" Depth		66724	**Craftsman**	4
					Total Tools Back Wall	**13**
Door 1 - Inside	WPRXOF013	C-Clamp, 8" Opening, 3" Depth		UNK	Cincinnati Tool Co.	1
Door 1 - Inside	WPRXOF014	C-Clamp, 6" Opening, 2 3/8" Depth		66726	Craftsman	1
Door 1 - Inside	WPRXOF015	Clamp, 8" Opening, 8 1/2" Length		UNK	Brink & Cotton	1
					Total Tools Door 1- Inside	**3**
Door 1- Outside	WPRXOF016-17	C-Clamp, 8 1/2" Opening, 4 5/8" Depth		78-408	Armstrong	2
Door 1- Outside	WPRXOF018	C-Clamp, 12" Opening, 3" Depth		UNK	Cincinnati Tool Co.	1
Door 1- Outside	WPRXOF019-20	C-Clamp, 12" Opening, 3 1/4" Depth		UNK	UNK	2
					Total Tools Door 1- Outside	
Door 2 - Inside	WPRXOF021	Crosscut Saw, 24" Blade		UNK	Berkshire	1
Door 2 - Inside	WPRXOF022	Crosscut Saw, 15" Blade + cover		15-334	Stanley	1

Door 2 - Inside	WPRXOF023	C-Clamp, 2" Opening, 1 3/4" Depth		UNK	Hargrave	1
Door 2 - Inside		C-Clamp, 2" Opening, 3 3/8" Depth		UNK	B & C	1
Door 2 - Inside		C-Clamp, 6" Opening, 2 3/8" Depth			**Craftsman**	**1**
					Total Tools Door 2 - Inside	**5**
Door 2 - Outside		C-Clamp, 6" Opening, 3 1/2" Depth			**Armstrong**	**3**
					Total Tools Door 2 - Outside	**3**
Door 3 - Inside		Empty			**Total Tools Door 3- Inside**	**0**
Door 3 - Outside		Empty			**Total Tools Door 3 - Outside**	**0**
Door 4 - Inside		Empty			**Total Tools Door 4 - Inside**	**0**

Door 4 - Outside		Empty			**Total Tools Door 4 - Outside**	**0**
Shelf 1	WPRXOF029	Torque Wrench 3/4" drive (1 pc + Case) * (C822584)		96355	Central Tools Inc.	1
					Total Tools- Shelf 1	**1**
Shelf 2	WPRXOF030	Tap & Die Set (54 pieces + case)*		UNK	Greenfield	1
	WPRXOF031	Wrench, Open End 1 ½" (LMT)			**Total Tools - Shelf 2**	**2**
Shelf 3		Empty			**Total Tools - Shelf 3**	**0**
					Total Tools	**31**

CTK Custodian Signature:_____Date:_____

Attachment 10

COMPLETION INSTRUCTIONS FOR NON-CTK EQUIPMENT SIGN OUT SHEET

A10.1. When completing this sign out sheet, only one item will be signed out per line item. See **Figure A10.1**.

A10.2. Date. Enter the current date.

A10.3. Nomenclature/Model #/Serial #. Enter the name of the item. Include the model number and serial number if the item has one.

A10.4. Destination. Enter the location where the item is signed out to.

A10.5. Employee Signature. The person who takes the item signs here. Use a legible signature.

A10.6. Date Due For Return. Enter the anticipated date the item will be returned.

A10.7. Date Returned. Enter the actual date the item is returned.

A10.8. Returning Employee Signature. The person who returns the item signs here. Use a legible signature.

Figure A10.1. Sample Non-CTK Equipment Sign-Out Sheet.

Non-CTK Equipment							
Date	Nomenclature Model# Serial #	Destination	Employee Signature	Date Due For Reture	Date Returned	Returning Employee Signature	
01/10/12	Fluke Meter (model-DC987) (SN 157921)	Edwards AFB	//signed//	10/10/12	08/10/12	//signed//	

Attachment 11

AFRL EID CONVENTION

A11.1. The first four characters of the EID are the WWID code. The following WWIDs shown in **Table A11.1** are established for AFRL.

Table A11.1. AFRL EID Convention.

SITE	TD/711 HPW	WWID
Tri-Service Research Laboratory (TSRL)	711 HPW	BRHE
Edwards RS	RQ	EBME, EBIN, EBFB, EBSP, EBAL, EBHA, EBHC, EBFZ, EBPC, EBIL, EBIS, EBVT, EBEC, EBFL, EBEB, EB13, EBSM, EBSC, EBSH, EBMU, EBAS
Eglin RS	RW	EMNA, EGMN, EMGI, EMGN, EMGS, EMED, EMEI, EMEP, EMER, EMEX, EMMF, EMMI, EMMW
Maui RS	RD	KRDSM
Phillips RS , Kirtland	RD	KRDB, KRDC, KRDE, KRDF, KRDH, KRDL, KRDS,
	RV	HAL0, HANT, HANB, KRA0, KRAB, KRVA, KRVB, KRVC, KRVD, KRVE, KRVF, KRVG, KRVH, KRVI, KRIVQ, KRVJ, KRVK, KRVL, KRVM, KRVO, KRVP, KRVS
Rome RS	RI	RSIF
Wright RS	711 HPW	WPHE, WV13, WPRH
	RQ	WPPR, WPVA
	RX	WPML
	RY	WPSN, WPSNH, WPIF, WPML
	WS	WPWS
ARNOLD AFB	RQ	WPPR

A11.2. The process to assign the remaining five characters will be established by the TD/711 HPW LOG MGR.

Attachment 12

COMPLETION INSTRUCTIONS FOR DISTRIBUTED CTK INDIVIDUAL ITEM TRACKING LOG

A12.1. When completing this sign out sheet, only one item will be signed out per line item. All items must be returned to the CTK at the end of the day in FOD-critical areas. All items must be returned to the CTK at the end of the week in non-FOD-critical areas. When used for off-site deployments, all items will be returned to the distributed CTK.

A12.2. CTK. Enter the CTK EID.

A12.3. Nomenclature. Enter the name of the item. See **Figure A12.1**.

A12.4. Date. Enter the current date.

A12.5. Destination. Enter the location where the item is signed out to.

A12.6. Employee Signature. The person who takes the item signs here. Use a legible signature.

A12.7. Returning Employee Signature. The person who returns the item signs here. Use a legible signature.

Figure A12.1. Sample CTK Individual Item Tracking Log.

CTK WPPRO025E	Distrubuted CTK Individual Item Tracking Log FO-Critical Areas. All Items must be returned at the end of the day. Non FO-Critcal Areas. All items must be returned at the end of the week. Off-Site Deployments. Return all items upon return from the depolyment.			
Nomenclature	Date	Destination	Employee Signature	Returning Employee Signature
Swiss File Set, (12 Pieces plus Box)	10/10/12	Edwards AFB	//signed//	//signed//

Attachment 13

LOCALLY MANUFACTURED/MODIFIED TOOLS (LMT) MEMORANDUM FORMAT

Figure A13.1. LMT Memorandum Format.

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO

DD Month YYYY

MEMORANDUM FOR (Applicable Branch Chief)

FROM: (Owning Work Center)

SUBJECT: Locally Manufactured/Modified Tools Approved

1. The following locally manufactured/modified tool was approved for use in (enter owning work center).

(Enter name or description of the locally manufactured/modified tool).

Choose one of the following statements:

- The (enter tool name or description) was etched with WWID and added to work center CTK.
- The (enter tool name or description) was not added to a CTK and will be treated as Shop Equipment.
- The (enter tool name or description) is only approved for one-time use.

2. A digital picture of the item is attached.

3. If you have any questions, please contact (enter POCs name and phone number).

(Enter Work Center Lead's Signature Block)
(Enter Work Center Lead's Duty Title)

Attachment:
Digital Picture of (enter tool name or description)

Deliver and Support Agile War-Winning Capabilities

Attachment 14

COMPLETION INSTRUCTIONS FOR AFMC FORM 310 (FOR FOD CRITICAL AREAS ONLY)

A14.1. Block 1. Enter a TD/711 HPW unique control number. Use the TD/711 HPW, Date, and running total for that date to construct the control number, for example, WS36105.

A14.2. Block 2. Print the name of the individual who discovered the item missing or found the item.

A14.3. Block 3. Enter the office symbol of the individual listed in Block 2.

A14.4. Block 4. Enter the date and time the item was discovered missing. Leave blank for found items.

A14.5. Block 5. Enter a brief description of the lost/ found item.

A14.6. Block 6. Enter the CTK EID for the item.

A14.7. Block 7A. Describe the area where the item was lost. Leave blank for found items.

A14.8. Block 7B. Enter the serial number or describe the major end item the item was on or near. Leave blank for found items.

A14.9. Block 8. Provide a brief description of how the item was lost or found.

A14.10. Block 9. Enter a legible signature for the person identified in Block 2.

A14.11. Block 10. Print the CTK Custodian name and the date/time they were notified of the lost/found item.

A14.12. Block 11A. When a replacement tool is authorized, enter the Branch Chief's signature.

A14.13. Block 11B. Enter the date the replacement tool is authorized.

A14.14. Block 11C. Enter the Branch Chief's phone number.

A14.15. Block 11D. Enter the Branch Chief's office symbol.

A14.16. Block 11E. Enter the legible signature of the CTK Custodian issuing the replacement tool.

A14.17. Block 11F. Enter the date the replacement tool was issued.

A14.18. Block 12. Provide a description of the search efforts used to find the lost item. Leave blank for found items.

A14.19. Block 13. Enter the date and time the search was initiated for the lost item. Leave blank for found items.

A14.20. Block 14. Enter the date and time the search was terminated for the lost item. Leave blank for found items.

A14.21. Block 15. Print the full names of the individuals that primarily conducted the search for the lost item. Leave blank for found items.

A14.22. Block 16. When a lost item search is terminated, indicate if the item was found or not. Leave blank for found items.

A14.23. Block 16A. Provide the location and date an item is found.

A14.24. Block 16B. If used, this is completed by the Branch Chief. If not used, leave blank.

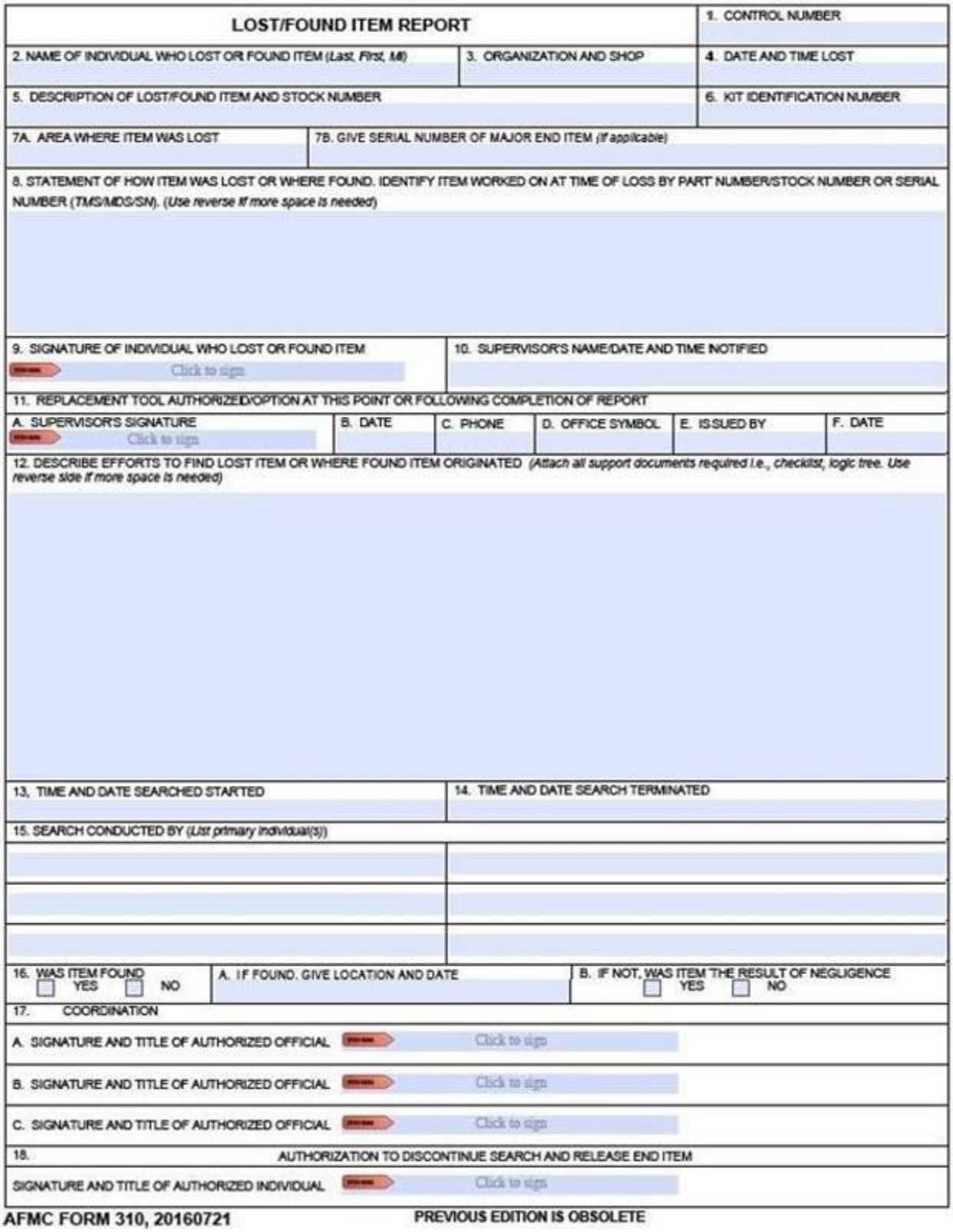
A14.25. Block 17A. The work center lead enters a legible signature and the date/time signed.

A14.26. Block 17B. The CTK Custodian enters a legible signature and the date/time signed.

A14.27. Block 17C. The Branch Chief enters a legible signature and the date/time signed.

A14.28. Block 18. The TD/711 HPW designated representative enters a legible signature and the date/time signed.

Figure A14.1. Sample AFMC Form 310.



LOST/FOUND ITEM REPORT

1. CONTROL NUMBER

2. NAME OF INDIVIDUAL WHO LOST OR FOUND ITEM (*Last, First, MI*)

3. ORGANIZATION AND SHOP

4. DATE AND TIME LOST

5. DESCRIPTION OF LOST/FOUND ITEM AND STOCK NUMBER

6. KIT IDENTIFICATION NUMBER

7A. AREA WHERE ITEM WAS LOST

7B. GIVE SERIAL NUMBER OF MAJOR END ITEM (*If applicable*)

8. STATEMENT OF HOW ITEM WAS LOST OR WHERE FOUND. IDENTIFY ITEM WORKED ON AT TIME OF LOSS BY PART NUMBER/STOCK NUMBER OR SERIAL NUMBER (*TMS/MDS/SN*). (*Use reverse if more space is needed*)

9. SIGNATURE OF INDIVIDUAL WHO LOST OR FOUND ITEM

Click to sign

10. SUPERVISOR'S NAME/DATE AND TIME NOTIFIED

11. REPLACEMENT TOOL AUTHORIZED/OPTION AT THIS POINT OR FOLLOWING COMPLETION OF REPORT

A. SUPERVISOR'S SIGNATURE	B. DATE	C. PHONE	D. OFFICE SYMBOL	E. ISSUED BY	F. DATE
Click to sign					

12. DESCRIBE EFFORTS TO FIND LOST ITEM OR WHERE FOUND ITEM ORIGINATED (*Attach all support documents required i.e., checklist, logic tree. Use reverse side if more space is needed*)

13. TIME AND DATE SEARCHED STARTED

14. TIME AND DATE SEARCH TERMINATED

15. SEARCH CONDUCTED BY (*List primary individual(s)*)

16. WAS ITEM FOUND ☐ YES ☐ NO	A. IF FOUND, GIVE LOCATION AND DATE	B. IF NOT, WAS ITEM THE RESULT OF NEGLIGENCE ☐ YES ☐ NO

17. COORDINATION

A. SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL Click to sign

B. SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL Click to sign

C. SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL Click to sign

18. AUTHORIZATION TO DISCONTINUE SEARCH AND RELEASE END ITEM

SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL Click to sign

AFMC FORM 310, 20160721 PREVIOUS EDITION IS OBSOLETE

Attachment 15

AFRL FORM 30

Figure A15.1. AFRL Form 30.

ESD CONTROL SURVEY/ANNUAL CERTIFICATION

ORGANIZATION/BRANCH/ROOM #	Date (YYYYMMDD)

I. SURVEY TEAM MEMBERS

NAME

II. WORK AREA DESCRIPTION *Define ESDS control area and work performed.*

DESCRIPTION OF WORK AREA

III. ESDS ITEMS *Please check ESD items found within work center*

☐ CIRCUIT BOARDS/MODULES ☐ DISCRETE PARTS ☐ ASSEMBLIES ☐ LRUs/SRUs

IV. ESD CONTROL REQUIREMENTS

NOTE: ESD workstation includes word surface, wrist strap, & common point ground (7.5.d(1))		NOTE: Static dissipative flooring system includes static dissipative flooring, shoes and seating (7.5.d(7))	
☐ ESD Workstation (fixed)*	Quantity	☐ Static dissipative flooring *	Quantity
☐ Portable workstations	Quantity	Nozzles* ☐ Yes ☐ No Type ☐ Dry nitrogen ☐ Hot air blowers ☐ Compressed Air ☐ Vacuum	
☐ Soldering Iron(s)	Quantity		
☐ Wrist Strap Tester	Quantity	Garments/Gloves Fingercots ☐ Yes ☐ No	
☐ Bench Top Ionizer	Quantity	Packaging Materials/ Containers ☐ Yes ☐ No	
☐ Caps/Plugs	Quantity	Storage Cabinets and Shelves ☐ Yes ☐ No	
Add'l Grd Elec Tools Explain in Remarks below or Pg 2 ☐ Yes ☐ No		Other	
		Misc ☐ Describe in Remarks below or Page 2	

Surveyor's Remarks (*Include specific instructions or comments or additional ESD control requirements. Continue on Page 2 if needed*)

V. ESD CERTIFICATION

By signing below, you are certifying that the above Work Center meets all requirements as identified in this document and TO-00-25-234 for electrostatic discharge sensitive items.

Initial/Annual ESD Training accomplished on all routine employees ☐ Yes ☐ No	Periodic testing accomplished (* in Section IV) (See Table 7-5 for full list) ☐ Yes ☐ No

Name	E-Mail	Office Symbol	Phone Number

Signature	Date

AFRL FORM 30 December 2018 PREVIOUS EDITIONS ARE OBSOLETE
Prescribing Directive: AFRLI 21-101

Attachment 16

FOREIGN OBJECT DAMAGE (FOD) REPORT FORMAT

Figure A16.1. FOD Report Format.

MEMORANDUM FOR Date

FROM: <Unit Designation/Office Symbol> <Street> <Base and Zip Code>

SUBJECT: <Foreign Object Report> . FOD program report number (unit, year, and month, followed by sequence number -- example, 301FW-F-060501).

1. Type of report: Initial/Formal Update/Final FOD Report
2. Date and Time of Incident:
3. Unit and Base of Incident:
4. Origin of Sortie:
5. When discovered (Preflight, Postflight, In-Coming, Test Cell, etc)
6. Owning Unit, Base and MAJCOM
7. MDS and Tail Number (N/A for Test Cell incidents)
8. Engine Type, Make, Series, Modification (TMSM)
9. Engine Serial Number (S/N):
10. Engine Position (If Applicable):
11. Time Since Overhaul:
12. Description of Incident:
13. Material Failure: (Yes or No)
14. Tech Data Deficiency: (Yes/No)
15. Preventable/Non-Preventable:
16. Investigation Findings:
17. Action Taken to Prevent Recurrence:
18. Parts Cost: Labor Cost: Total Cost:
19. Additional Comments (if necessary):

<Sign> FOD Monitor, <Unit Designation>

Attachment 17

APPOINTMENT LETTERS

A17.1. If a contractor is appointed as a primary/alternate in some type of role, the appointment letter should contain the following elements:

A17.1.1. The contract number/task order number

A17.1.2. The name of the company

A17.1.3. The name of the individual appointed on the company's behalf

A17.1.4. The name of the COR

A17.2. If the appointment letter designates both a government and contractor POC, the roles for each should be clearly defined in the appointment letter. A copy of all appointment letters appointing a contractor as POC shall be forwarded to the COR and the Contracting Officer.

Attachment 18

EQUIPMENT FAILURE SEVERITY

Figure A18.1. Equipment Failure Severity.

Equipment Failure Severity

LEVEL	CATEGORY	MISSION CAPABILITY CRITERIA
I	Catastrophic	Failure of this equipment will result in a failure of the mission this equipment supports due to repair or replacement time that is unacceptable
II	Critical	Failure of this equipment will result in impairment of the mission this equipment supports due to repair or replacement time that would be extensive.
III	Marginal	Failure of this equipment would likely minimally affect the mission this equipment supports due to downtime for repairs or replacement
IV	Negligible	Failure of this equipment is unlikely, downtime for repairs or replacement would not negatively affect support of the mission this equipment supports

Figure A18.2. Failure Probability.

Failure Probability

LEVEL	CATEGORY	DESCRIPTION	PROBABILITY
A	Frequent	(Continuously experienced failure)	1 in 2
B	Likely	(Failure Will occur frequently)	1 in 5
C	Occasional	(Failure Will occur several times)	1 in 10
D	Seldom	(Failure Unlikely; can be expected to occur)	1 in 15
E	Rarely	(Failure Improbable; but possible to occur)	1 in 50

Figure A18.3. Failure Index.

Failure Index (FI)

SEVERITY		I	II	III	IV
PROBABILITY		*Catastrophic*	*Critical*	*Moderate*	*Negligible*
A	*Frequent*	1	3	7	13
B	*Likely*	2	5	9	16
C	*Occasional*	4	6	11	18
D	*Seldom*	8	10	14	19
E	*Rarely*	12	15	17	20

Figure A18.4. Risk Assessment Matrix.

Risk Assessment Matrix

SEVERITY		I	II	III	IV
PROBABILITY		*Catastrophic*	*Critical*	*Moderate*	*Negligible*
A	*Frequent*	*Critical equipment, not considered for maintenance exemption*			
B	*Likely*				
C	*Occasional*				
D	*Seldom*		*Possibly critical equipment, consider carefully for exemption*	Non-critical equipment, consider for maintenance exemption	
E	*Rarely*				

Risk Assessment Levels
EH=Extremely High H=High M=Medium L=Low

Figure A18.5. Risk Analysis for Maintenance Exemption.